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**Report  
Project No. 60128**

**Remedial Investigation  
WRR RI/FS Site  
Columbia City, Indiana  
Volume II of III**

Prepared for:  
**WRR RI/FS PRP Group**

Prepared by:  
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## APPENDIX A

### SUMMARY OF FIELD PROCEDURES

## PROCEDURE NUMBER 1

### TEST PITS

Test pits were performed by an environmental subcontractor under the supervision of Warzyn personnel. All personnel involved in test pit excavation were equipped in Level B health and safety protection equipment. A backhoe was used to excavate the test pits at selected locations. Field notes, photography labels and HNu readings were recorded as described in Procedure No. 7, "Sampling Protocol". Final depths of each test pit were determined by the Warzyn supervisory personnel, based on conditions observed in each excavation. Upon completion of excavating each test pit, it was backfilled with the material that had been removed from that pit. The bucket of the backhoe was used to tamp down the backfilled material, to compact it as much as possible, then it was allowed to settle naturally.



## PROCEDURE NUMBER 2

### SOIL SAMPLING AND MONITORING WELL INSTALLATION

#### 1. Introduction

This procedure describes the decontamination, drilling, soil sampling, and monitoring well installation techniques used for on- and off-site groundwater monitoring wells.

#### 2. Decontamination

Prior to the initiation of monitoring well installation activities, the following decontamination procedures were carried out.

The drill rig and drilling accessories were cleaned using a portable steam cleaner. Potable water was obtained from an off-site water supply at the Columbia City Ready-Mix cement company in Columbia City, Indiana. Following decontamination of the drilling equipment, contact between the drilling accessories and possible sources of contamination were minimized by storing them on cleaned areas of the drill rig. Potable water was used for steam cleaning, equipment rinsing, and decontamination procedures. Equipment which came into contact with wastes disposed of on-site was cleaned, as described above, before it was used for monitoring well installation activities.

Additionally, the well casing, well screen and casing hardware were cleaned by steam cleaning with potable water prior to being installed in each monitoring well. The well materials were stored off the ground on pallets and covered with plastic sheeting to minimize possible contamination. Well construction materials (e.g., cement, sand, bentonite) were also stored off the ground on pallets and covered with plastic sheeting to minimize possible contamination.

These decontamination procedures were followed before work at each of the groundwater monitoring well borings and at the completion of the groundwater monitoring well installation program.

### 3. Drilling

A Warzyn geologist was on site during the drilling process to log subsurface conditions and other information for each well boring. Selection of the depth and length of the well screen were determined in the field on the basis of geologic conditions at the site.

The shallow monitoring wells were advanced using 4.25-inch inside diameter (ID) hollow stem augers or 5-7/8 inch tri-cone rotary wash methods to a depth approximately one foot beyond the bottom of the determined screened interval.

The intermediate and deep monitoring wells were advanced using tri-cone rotary wash methods. Telescoping 4, 5 and 6 inch steel casing was used to seal the upper aquifer from the lower, and to reduce the possibility of cross contamination between the aquifers. The steel casing was charged with a bentonite slurry to allow the hole to stay open during advancement. The wells were flushed with potable water during well installation in an effort to remove the slurry from the borehole.

The horizontal and vertical coordinates of the ground surface and the top of the inner casing of each monitoring well were surveyed upon completion of well installation.

### 4. Soil Sampling

Standard split spoon samples were obtained at 2.5 foot intervals from 0 to 10 feet in depth, then at 5 foot intervals or at the discretion of the field geologist, to the end of the boring. A detailed description of this method is described in Procedure No. 3, "Split Spoon Soil Sampling". The soil samples were collected for geotechnical classification purposes. Samples from each depth interval were obtained and archived in 8 ounce glass soils jars. There was the potential that the surfaces (top, bottom, sides) of the soil sample may have been contaminated due to the samples passing through the drilling fluid. Drilling fluid and affected portions of the soil samples were removed by scraping the sample prior to placement in the appropriate container.



## 5. Monitoring Well Installation

After drilling of the monitoring well soil boring was completed, well installation commenced. Each well casing consisted of thread-coupled 2-inch nominal diameter stainless steel casing. The casing was assembled at the monitoring well location to allow a thorough inspection of the joints and materials immediately prior to their installation.

The monitoring well screened sections consisted of Number 304 stainless steel, 10 slot (0.01 inches), wire wrapped well casing. Each screened interval was 10 feet in length. The remainder of the casing consisted of Number 304 stainless steel blank well casing which extended above the ground surface approximately 2.5 feet to prevent surface water intrusion. The top of the well casing was fitted with a threaded cap. The bottom of the screened interval was fitted with a threaded, stainless steel well plug. The depth of the well screen was selected by the Warzyn geologist at the time of drilling. During installation of the shallow wells, the well casing was lowered through the hollow stem augers, after which the augers were pulled to allow cave in of the natural soils. When installing the intermediate and deep wells, the well casing was lowered through the 4 or 5 inch steel casing, the sand pack was added, and the steel casing was removed.

Each well screen was surrounded by a filter pack consisting of natural cave-in materials and coarse flint sand to a depth of at least 1 foot above the top of the screened interval.

A minimum 2-foot thick bentonite slurry or bentonite pellet seal was placed on top of the filter pack to limit surface infiltration from entering the groundwater intake zone of the well. If bentonite slurry was used, it was injected into the zone just above the gravel pack through a tremie line. As a further measure to prevent surface water infiltration, the remaining height of the annulus was filled with granular bentonite, bentonite grout or a granular bentonite and cuttings mixture.

The groundwater monitoring wells were protected with an above-grade, locking steel casing installed around each well. Each protective casing was secured in the backfill material around the well casing to a depth of approximately 2 to 3 feet and extended above ground surface approximately 2.5 to 3 feet. Each protective casing had a locking mechanism to prevent unauthorized access



to the well and was numbered to facilitate future groundwater sampling. Figure 1 presents a typical groundwater monitoring well schematic.

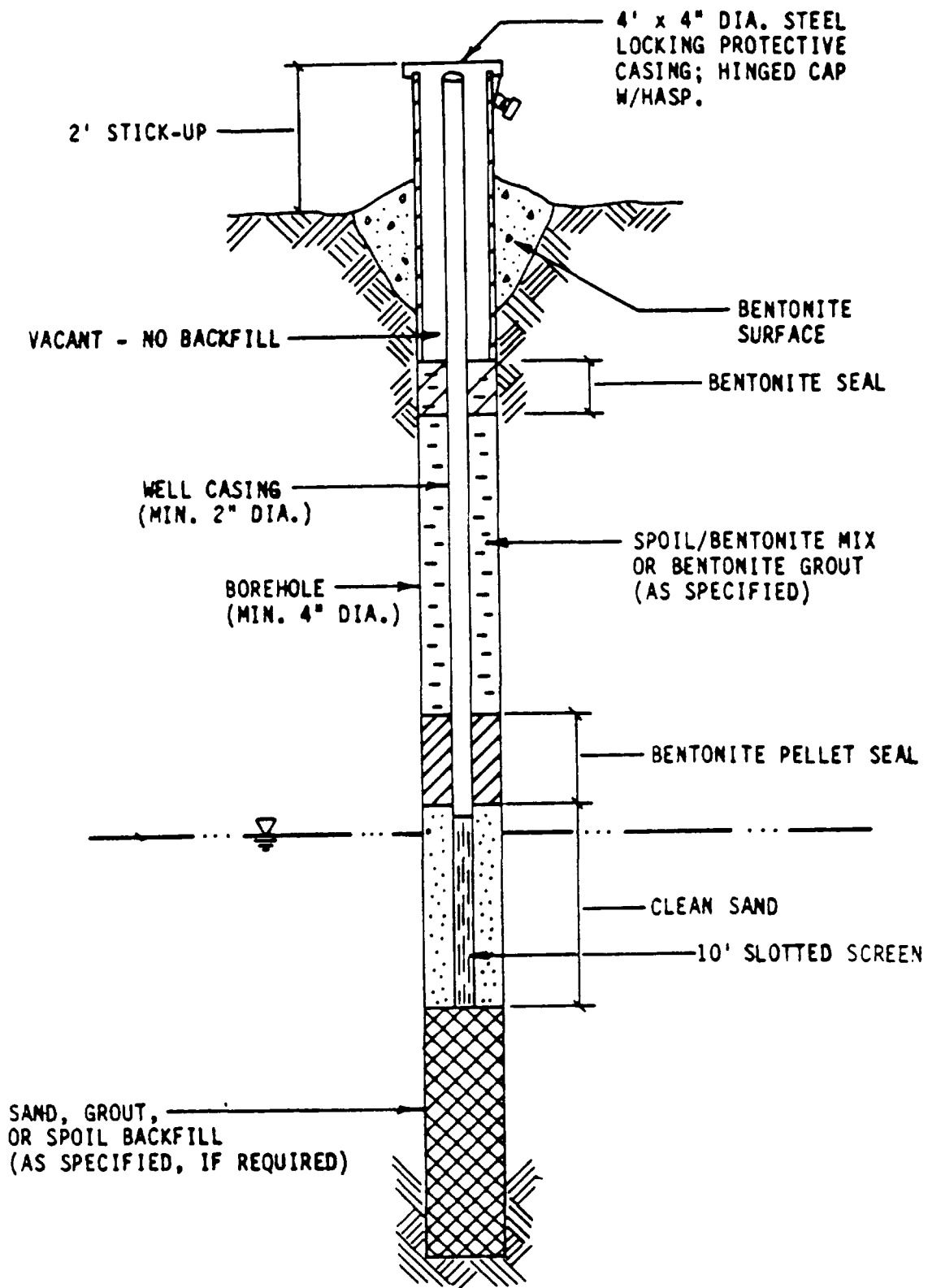
Soil cuttings produced during installation of the monitoring wells were collected in 55-gallon drums to be properly disposed of after the monitoring well installation field work was completed. The 55-gallon drums were stored on-site in a suitable area.

#### 6. Piezometer Installation

Four shallow water table piezometers were installed as described in Section 5, "Monitoring Well Installation". Each piezometer was constructed of thread-coupled, 2-inch nominal diameter, Schedule 40 Polyvinyl chloride (PVC) blank well casing. The screened interval was 10-feet in length, 2-inch nominal diameter, 10 slot (0.01 inch) Schedule 40 PVC well casing. These wells were installed for water level purposes only.

#### 7. Documentation

A boring log (Figure 2) was prepared by a Warzyn geologist present at the time of drilling. In addition, a monitoring well installation data sheet (Figure 3) was prepared that documents the geometry and configuration of each groundwater monitoring well. Field notebooks were maintained by assigned field personnel and contain a variety of information, as described in Procedure No. 7, "Sampling Protocol".



## STANDARD WELL CONSTRUCTION DETAIL

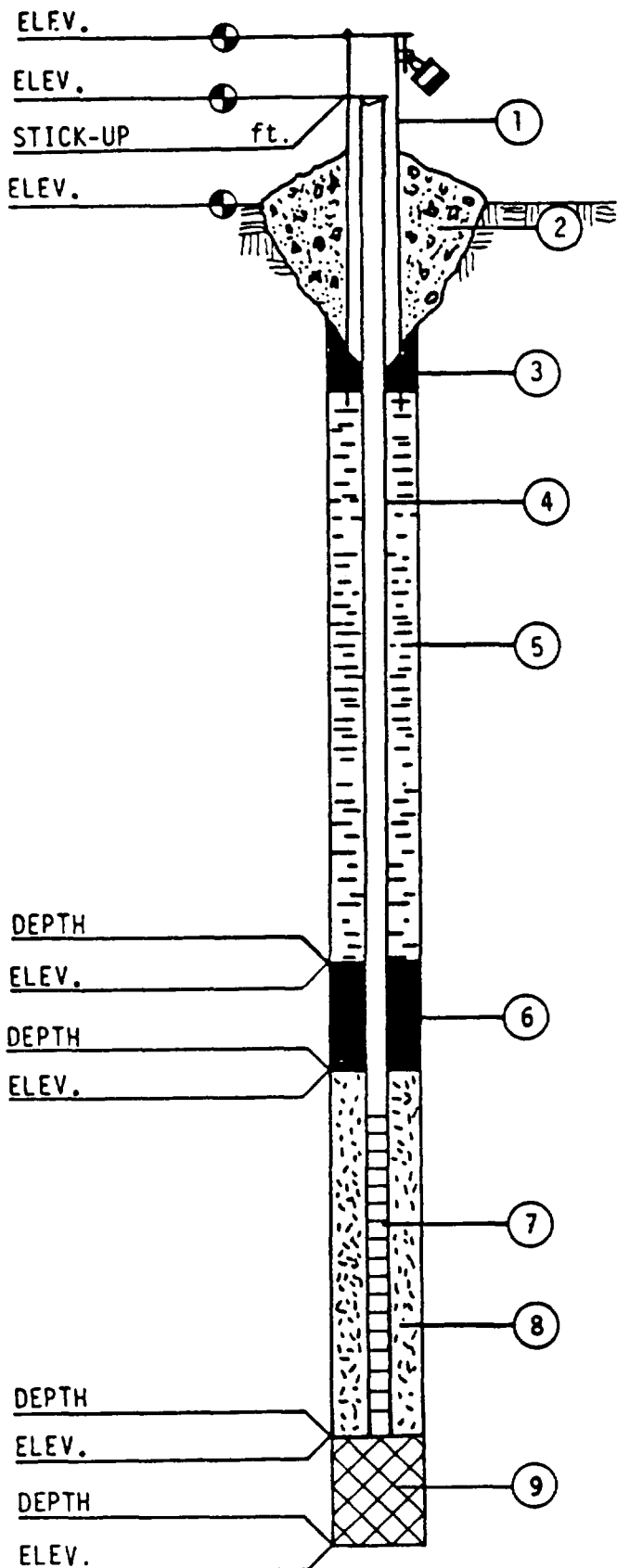
FIGURE 1

## Sheet                      Of

Elev.

Boring No.

FIGURE 2



# MONITORING WELL CONSTRUCTION INFORMATION

JOB NO. \_\_\_\_\_

BORING/WELL NO. \_\_\_\_\_

DATE \_\_\_\_\_

CHIEF/UNIT \_\_\_\_\_

1. PROTECTIVE CASING YES NO

LOCKING YES NO

2. CONCRETE SEAL YES NO

3. TYPE OF SURFACE SEAL (IF INSTALLED)

4. SOLID PIPE TYPE \_\_\_\_\_

SOLID PIPE LENGTH \_\_\_\_\_ ft.

JOINT TYPE SLIP/GLUED THREADED

5. TYPE OF BACKFILL \_\_\_\_\_

HOW INSTALLED - TREMIE  
FROM SURFACE

6. TYPE OF LOWER SEAL (IF INSTALLED)

7. SCREEN TYPE \_\_\_\_\_

SCREEN LENGTH \_\_\_\_\_

SLOT-SIZE \_\_\_\_\_ LENGTH \_\_\_\_\_ ft.

SCREEN DIAMETER \_\_\_\_\_ in.

8. TYPE OF BACKFILL AROUND SCREEN

9. TYPE OF BACKFILL \_\_\_\_\_

10. DRILLING METHOD \_\_\_\_\_

11. ADDITIVES USED (IF ANY)

WATER LEVEL \_\_\_\_\_ DATE \_\_\_\_\_

\*ALL DEPTHS MEASURED FROM GROUND SURFACE.



FIGURE 3

### PROCEDURE NUMBER 3

#### MONITORING WELL DEVELOPMENT AND SAMPLE COLLECTION

##### 1. Introduction

Each groundwater monitoring well installed was developed to restore the natural permeability of the formation, to facilitate the movement of groundwater to the wells and to assist in the collection of representative groundwater samples for subsequent laboratory analysis. This procedure describes the well development and sample collection techniques.

##### 2. Well Development

Development of the monitoring wells was performed by the removal of at least ten well volumes of water, utilizing either a stainless steel bailer or a Keck submersible pump. pH, temperature and specific conductivity of each well volume of purged water was monitored during development and had stabilized by the removal of the tenth volume of water from each well. This data, along with other pertinent information, was recorded on a Well Development Data Sheet (see Figure 4).

##### 3. Groundwater Sampling

Groundwater sampling at each well proceeded as follows:

- a. The depth to the table was measured prior to any other sampling procedure. A groundwater measuring tape was used to determine the depth of the water below the top of the inner casing
- b. In an effort to remove stagnant water, stratified fluids, or residual drilling contaminants within or near the screened interval, wells were bailed or pumped prior to sampling. Each well was flushed until three to five well volumes of water had been removed or, if the well had a slow recharge, it was pumped or bailed dry. The first two well volumes were removed from the top of the column of water to attempt to remove stagnant water in the well above the screened section.

## WELL DEVELOPMENT DATA SHEET

Project \_\_\_\_\_ Date \_\_\_\_\_ Page \_\_\_\_ of \_\_\_\_  
 Project Number \_\_\_\_\_ Well Number \_\_\_\_\_  
 Diameter of Well \_\_\_\_\_ Length of Water Column \_\_\_\_\_  
 Depth of Well \_\_\_\_\_ One Well Volume \_\_\_\_\_  
 Initial Water Level \_\_\_\_\_ Time \_\_\_\_\_  
 Final Water Level \_\_\_\_\_ Time \_\_\_\_\_  
 Field Personnel \_\_\_\_\_  
 Development Method \_\_\_\_\_

### WITHDRAWAL OF WELL VOLUMES

	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>
Time End						
Flushing						
Volume Flushed						
Temperature						
pH						
Conductivity						
Odor						
Water Quality						
Other						
	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>	<u>Volume</u> <u>No.</u>
Time End						
Flushing						
Volume Flushed						
Temperature						
pH						
Conductivity						
Odor						
Water Quality						
Other						

Remarks:

### WELL CASING VOLUMES

GAL./FT	1-1/4" = 0.077
	1-1/2" = 0.10
	2" = 0.164
	2-1/2" = 0.24
	3" = 0.37
	3-1/2" = 0.50
	4" = 0.65
	6" = 1.46

FIGURE 4

If recharge to the well was sufficiently fast, samples were obtained immediately after fluid extraction. Several of the deep wells installed by a previous contractor had very slow recharge. They were purged, then sampled as soon as they had recovered sufficiently to provide adequate volume of water. This involved sampling from between 24 hours to one and one-half weeks after purging. The time, method of flushing, volume of water removed from the well and other pertinent information was recorded on a Groundwater Sampling Data Sheet (see Figure 5).

- c. Sampling of the wells was accomplished using a clean stainless steel bailer or a clean Keck Pumping System.
- d. Following the above preparations to obtain the water sample, initial water retrieved during sampling was used to fill Volatile Organic Analysis (VOA) vials; second, to completely fill the remaining sample containers; and third, to provide water for field analysis of pH, specific conductivity and temperature of the sample. The results of the field analysis parameters were entered on the Groundwater Sampling Data Sheet. The date, time, and monitoring well sample number were also recorded on the data sheet and on the label attached to each of the sample containers. The sample containers were then filtered and/or preserved, sealed, and placed on ice in coolers. Instructions on sample labeling, preservation, packaging and shipping are described in Procedure No. 6, "Sampling Protocol."
- e. Because suspended particles are not generally transported by groundwater, it was important to filter water samples designated for dissolved metals analysis so that an accurate determination of dissolved metal concentrations could be obtained. Filtering was completed prior to preservation and shipment of the dissolved metals samples for each well. Filtration of samples was conducted according to the method as described in Section 4, "Filtration".
- f. One field blank and one field duplicate were collected for each round of 10 water samples obtained. One matrix spike and one matrix spike duplicate were collected for every 20 samples obtained. A trip blank was also included in each shipment containing water samples for volatile organics analysis.

### GROUNDWATER SAMPLING DATA SHEET

Project \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Project No. \_\_\_\_\_ Well No. \_\_\_\_\_ Sample No. \_\_\_\_\_

Field Personnel: \_\_\_\_\_

#### Time

\_\_\_\_\_ Initial Water Level \_\_\_\_\_  
• Length of Water Column \_\_\_\_\_  
• Diameter of Well \_\_\_\_\_  
• Evacuation Method \_\_\_\_\_  
• Depth of Well \_\_\_\_\_  
• One Well Volume \_\_\_\_\_

\_\_\_\_\_ Began Evacuation

\_\_\_\_\_ Number of Volumes Removed \_\_\_\_\_

\_\_\_\_\_ Began Sampling

\_\_\_\_\_ Completed Sampling

\_\_\_\_\_ Sampling Method \_\_\_\_\_

Well Casing Volumes  
(gal/ft)

\_\_\_\_\_ Field Analysis \_\_\_\_\_  
• Temperature \_\_\_\_\_ 2.25" = 0.077  
• pH \_\_\_\_\_ 1.5" = 0.10  
• Specific Conductivity \_\_\_\_\_ 2" = 0.164  
• Water Quality \_\_\_\_\_ 2.5" = 0.24  
• Odor \_\_\_\_\_ 3" = 0.37  
• Other \_\_\_\_\_ 3.5" = 0.50  
\_\_\_\_\_ Final Water Level \_\_\_\_\_ 4" = 0.65  
6" = 1.46

Samples Obtained:

Remarks:

GROUND SAMP SHEET

FIGURE 5



Field blanks were obtained from the sampling equipment as a check on the thoroughness of the decontamination procedures. A field blank was collected by decanting distilled water through the cleaned water sampling equipment and into the appropriate sample containers. Each field blank was preserved and/or filtered according to the same procedures as the groundwater samples.

#### 4. Filtration

The filtration method outlined below was formulated based on practical experience and consideration of chain-of-custody and other requirements.

Prior to sample filtration, equipment used during filtration was cleaned. Samples for filtration were collected in laboratory provided, 1-liter polyethylene pre-filtration sample bottles included in the set of bottles for each sampling station.

Once collected, the samples were transported from the well site to the filtration location. A Millipore Positive Pressure filtering apparatus with 0.45 um filter was used in the filtering operation. The disposable filter was changed after each one-quarter to one-half liter of water filtered, dependent on the siltiness of the water, to minimize the possibility of breakthrough of the filtered particles.

One-quarter liter of the sample was decanted into the apparatus, which was sealed. Pressurized air was applied to force water through the filter. The filtered sample was caught in a clean, laboratory provided, 1-liter polyethylene container. The filter was then changed (if it appeared clogged) and the process repeated until the sample bottle was filled. The filtered sample was then preserved, sealed and shipped as described in Procedure No. 7, "Sampling Protocol."

The used filters and field sample containers were stored in a plastic bag for later proper disposal.



## 5. Documentation

Well Development and Groundwater Sampling Data Sheets (Figures 4 and 5) were completed for each well development and groundwater sampling activity. These data sheets include appropriate purging, field analysis and sampling information. In addition to these data sheets, field notebooks and chain-of-custody forms were maintained, as described in Procedure No. 7, "Sampling Protocol."

PROCEDURE NO. 4  
SPLIT-SPOON SOIL SAMPLING

1. Introduction

This procedure was designed to standardize the method by which split-spoon soil sampling was performed, soil data documented, and soil samples processed for the soil borings, piezometers and the groundwater monitoring wells. The soil boring and sampling program was conducted to determine the horizontal and vertical extent of soil contamination, to obtain samples for geotechnical testing, to determine the stratigraphy and the location and depth of new monitoring wells, and to assist in the design and implementation of remedial action.

2. Soil Sampling

Soil samples were obtained by driving the split-spoon sampler 1.5 feet with a free-falling 140-pound hammer in accordance with the procedures described in ASTM-D1586, "Standard Method for Penetration Test and Split-Barrel Sampling of Soils." Soils were sampled at 2.5 or 5-foot intervals or at the discretion of the field geologist, depending on the type of soil boring and the respective field conditions encountered. The sampling method generally conformed to the following steps:

- a. After the boring had been advanced to the desired sampling depth by the selected drilling method (tri-cone rotary, solid stem auger, or hollow stem auger) the split-spoon sampler was attached to the sampler rods and lowered into the borehole. The borehole depth was known prior to each sampling operation by measuring the length of each drill rod or auger.
- b. Once the split-spoon sampler had reached the bottom of the borehole, the drill rods were marked in three successive 6-inch increments. While driving the sampler with the 140-pound hammer, the number of blows required per 6-inch increment was counted. Driving was discontinued after one of the following occurred:
  1. A total of 50 blows had been applied during any one of the three 6-inch increments.



2. A total of 100 blows had been applied.
  3. There was no observed advance of the sampler during the application of 10 successive blows of the hammer.
  4. The sampler had advanced the complete 18 inches without any of the above occurring.
- c. The number of blows required to affect each 6 inches of penetration was recorded on the boring log (Figure 2). The first 6 inches was the seating drive. The number of blows required for the second and third 6 inches of penetration was summed to give the N-Value, the standard penetration resistance.

### 3. Soil Sample Processing

Soil sample processing was performed as follows:

- a. The split-spoon soil sampler was retrieved from the drilling assembly and laid out for breakdown in a designated work space or area. The sampler and any soil contained within was handled by personnel wearing gloves.
- b. The sampler was next broken down and the soil removed from the sampler. An HNu photoionization detector was then passed across the sampler as soon as it was opened. This was a preliminary screening effort that assisted field personnel to determine which samples to select for analysis and analytical laboratory personnel in their subsequent chemical analysis.
- c. Representative samples were then selected and placed into the appropriate sample containers as soon as possible. The collapsed portion of the sample was disregarded during sampling.
- d. Physical and geotechnical characteristics of the sample (e.g., depth interval, sample identification number, percent recovery, lithology, N-values) and HNu results were recorded on the boring log (Figure 2).
- e. The sample containers were then properly labeled and placed in coolers for temporary storage and final disposition as described in Procedure No. 7, "Sampling Protocol," and as dictated by project requirements.

- f. The split-spoon sampler was scrubbed with a brush, washed in Trisodium phosphate and potable water and rinsed with potable water after each use to minimize cross-contamination within the boring or other borings.

#### 4. Documentation

Documentation provides a complete record of procedures as performed in the field. Soil sample information recorded on boring logs comprises this documentary evidence. In addition, field notebooks and chain-of-custody forms were maintained as described in Procedure No. 7, "Sampling Protocol."

## PROCEDURE NO. 5

### AQUIFER TESTING

#### 1. Introduction

This procedure has been designed to standardize the method by which aquifer characteristics were obtained in selected monitoring wells constructed at the site. Estimates of aquifer transmissivity and hydraulic conductivity were derived by conducting slug tests in ten upper aquifer monitoring wells. A pumping test was conducted to estimate transmissivity, hydraulic conductivity and storativity of the lower aquifer. Results of these tests have provided information for use in establishing the interconnection of water-bearing zones and the feasibility of groundwater extraction and containment alternatives for remediation of site problems.

#### 2. Testing Procedure

##### Slug Test

- a. The static water level in the well was determined by measuring the depth to water. Once this level was established, a known volume of water was removed from the well. It was important to remove this known volume as quickly as possible, because the analysis assumed an "instantaneous" change in volume was created in the well.
- b. A Hermit SE1000B Data Logger was used to electronically record the changes in water level over time. With the moment of volume removal assigned time zero, a measurement of the depth of water and the time of each reading was recorded. Depth measurements were recorded to the nearest 0.01 foot. Time readings were recorded in seconds and minutes.
- c. The number of depth-time measurements necessary to complete each test was variable. Depth-time measurements continued until the water level returned to the static level or a sufficient number of readings had been made to clearly show a trend on a semi-log plot of time versus depth. The amount of time was dependent on the volume of water removed and the hydraulic conductivity of the formation test interval.



### Pumping Test

- a. The basic procedure consisted of monitoring the water level in several observation wells as the pumping well was discharged at a constant rate.
- b. Water levels were monitored in monitoring wells MW-1s, MW-1I, and MW-1D starting on Monday, August 22. The pumping test was conducted from 1:15 pm Wednesday, August 24 until 9:00 am August 25. Water levels in all wells instrumented for the test were monitored until approximately 9:00 am, August 26. In addition, barometric pressure was recorded during the test week. This information allowed the determination of the barometric efficiency of the aquifer when compared with barometric records. It also showed the aquifer response to pumping in the nearby area.
- c. All gauges and transducers used in conducting the pumping test were calibrated before use at the site.
- d. City well #8 was used to perform the pumping test. Columbia City officials allowed the city reservoirs to decline to minimum levels, to provide the largest possible continuous pumping test.
- e. Immediately before starting the pump, the water levels were measured in all observation wells and in the pumped well to determine the static water levels upon which the drawdowns were based. These data and the time of measurement were recorded in the field notebook.
- f. The instant of starting the pump was recorded as the zero time of the test. The city engineer adjusted pumping rate as close to 1500 gpm as possible.
- g. Water level measurements were made at all monitoring wells every 2 to 3 hours during the pumping test using an electric sounder and recorded to an accuracy of plus or minus 0.01 foot. The time of the measurement was also recorded. Thirteen monitoring wells were instrumented with electronic transducers to provide water levels for electronic recording during the test and recovery period. Ten wells were connected to a large multi-channel data logger, and three other wells were instrumented with individual, stand-alone transducers and data loggers. It was not necessary that readings at the wells be taken simultaneously, but it was very important that time and depth to water readings be measured accurately and recorded.

- h. The duration of the test was limited by the requirement to stop pumping when the city reservoirs had reached capacity (after 8 hours) and the recovery phase ended when reservoir levels got too low, and the pump was restarted (after 12 hours of recovery).
- i. Measurements of recovering water levels after pumping were performed in order to verify results obtained from the pumping portion of the test. The recovering water levels in the pumping well and the observation wells were measured for 12 hours immediately following cessation of pumping. The same procedure was followed as at the beginning of the pumping test.

### 3. Decontamination

Equipment used during the aquifer testing activities was decontaminated prior to and after use on each test. Water used for decontamination was clean, potable water.

### 4. Documentation

Complete listing of Bail test data and presentation of the analysis are included in Appendix G.

Further description of the pumping test, complete data, and analysis of the pumping test data are presented in Appendix H. Water levels measured manually during the pumping test are included in Appendix F.

## PROCEDURE NO. 6

### SURFACE WATER AND SEDIMENT SAMPLING

#### 1. Introduction

This procedure was designed to standardize the method for obtaining representative samples of surface water and sediment, documenting the sampling procedure, and processing the samples for laboratory analysis. Sampling was conducted to determine the nature and extent of contaminant migration from the site by surface and subsurface transport mechanisms, the solubility of specific contaminants in water, the absorption or reactivity of these contaminants with surficial materials, the general chemical or physical nature of the surface sediments, and the potential impact of site contaminants on the environment. A checklist used during sampling is included as Table 1.

#### 2. Sampling Procedure

Surface water samples were collected within the upper foot of water by using approved methods and equipment or by directly immersing the sample container. In general, sediment sampling techniques involved the use of a stainless steel scoop for collection. The following sampling technique was employed to gather surface water samples.

- Beakers, jars or dippers were attached to a rod or pole to extend the reach of the sampler away from the bank or shoreline. The sample collection container was constructed of stainless steel. It was submerged below the surface of the water and allowed to fill. After removal, the water was decanted into the appropriate sample containers.

Surface water samples were field tested for pH, temperature, and specific conductance using methods described in the Quality Assurance Project Plan (QAPP). At each sampling location surface water samples were collected first, followed by sediment sample collection.

Collection of sediment samples required no special sampling equipment or detailed procedure. Because sediment samples naturally compliment surface water samples, the sediment samples were collected at the locations directly

TABLE 1

Checklist for Surface Water and  
Sediment Sampling Procedures

1. Select locations for sampling
2. Determine analyses to be performed (listed in QAPP)
3. Obtain sample bottles with correct preservatives and shipping containers
4. Obtain labels, chain-of-custody forms and other documentation
5. Select appropriate sampling equipment
6. Clean sampling equipment
7. Package sampling equipment
8. Package sample bottle sets
9. Collect samples
10. Conduct field tests, if any
11. Complete Surface Water and Sediment Sampling Data Sheets
12. Label and package sample containers for shipment
13. Sign and date chain-of-custody form
14. Transport samples to shipper

beneath the surface water sample locations. Sediment samples were collected using a stainless steel scoop from the surface to a depth of no more than 6 inches.

All samples collected using surface water and sediment sampling equipment were transferred to the appropriate containers, filtered (if necessary), and preserved using accepted preservation techniques as determined by the type of analysis that was to be conducted.

Samples of the surface water for metals analysis were filtered prior to preservation so that results were reported as total dissolved metals. Samples were collected in the field in 1-liter plastic bottles without preservative. Samples were then transported to the field filtration station.

The samples were filtered through 0.45 micron membrane filters using methods as previously described in Procedure No. 2, Section No. 4, "Filtration." The samples were preserved with Nitric Acid ( $\text{pH} < 2$ ) and shipped to the analytical laboratory.

Equipment used during this sampling operation was decontaminated between samples as described below. A checklist used for surface water and sediment sampling procedures is provided in Table 1.

### 3. Decontamination

Sampling equipment was decontaminated near the sampling location, and set in plastic bags for transportation to next sampling station. The decontamination method was as follows:

- soap (trisodium phosphate or equivalent) in potable water solution
- potable water rinse
- distilled water rinse

Sample bottles were decontaminated by immersing the bottle up to the neck in a soap (trisodium phosphate or equivalent) and water solution followed by a potable water rinse.



#### 4. Sample Preservation, Packaging and Shipment

After a sample was transferred into the proper sample container, the container was tightly capped as quickly as possible to prevent the loss of volatile components and to exclude possible oxidation from the air.

When each sample was shipped to the analytical laboratory, it was packaged in an insulated shipping container to avoid leakage and/or breakage. The shipping container allowed for packing materials to be tightly packed around each sample container. Samples requiring refrigeration were cooled with ice in each shipping container. Each package was accompanied by a chain-of-custody record. Details on preservation, packaging and shipment are included in Procedure No. 7, "Sampling Protocol."

#### 5. Documentation

Documentation provided a complete record of procedures as performed in the field, permitted accurate identification of samples and tracking of their status in the field, during shipment and at the laboratory, and facilitated chain-of-custody and accountability procedures by providing legible, concise information.

Surface Water and Sediment Sampling Data Sheets (Figures 6 and 7) were completed for each sample. These data sheet included information on the sample locations, identification and the sampling conditions. They also included field measurements and information specific to the samples.

Details on the labeling, documentation and chain-of-custody requirements are included as Procedure No. 7, "Sampling Protocol."

# SURFACE WATER SAMPLING DATA SHEET

Project \_\_\_\_\_ Project Number \_\_\_\_\_  
Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Field Personnel \_\_\_\_\_  
Sample Number \_\_\_\_\_ Sample Site Number \_\_\_\_\_  
Sample Depth \_\_\_\_\_ Sample Method \_\_\_\_\_  
Sample Time \_\_\_\_\_  
Weather \_\_\_\_\_ Temperature \_\_\_\_\_

## FIELD ANALYSIS

Temperature \_\_\_\_\_  
pH \_\_\_\_\_  
Specific Conductivity \_\_\_\_\_  
Odor \_\_\_\_\_  
Water Quality \_\_\_\_\_  
Other \_\_\_\_\_

## SAMPLING LOCATION

Water Body Type \_\_\_\_\_  
Flowing      Non-Flowing  
Water Body Conditions \_\_\_\_\_  
Reference Points

Samples obtained:

Remarks:

SURFACE SAMPLING SHEET

FIGURE 6



SEDIMENT SAMPLING DATA SHEET

Project \_\_\_\_\_ Project Number \_\_\_\_\_

Date \_\_\_\_/\_\_\_\_/\_\_\_\_ Sample Number \_\_\_\_\_

Field Personnel \_\_\_\_\_

Sample Depth \_\_\_\_\_ Sample Time \_\_\_\_\_

Sample Method \_\_\_\_\_

Depth of water over sample \_\_\_\_\_

Type of water over sample \_\_\_\_\_

Sample Description

Reference Points

Samples obtained:

Remarks:

SEDIMENT SAMPLING SHEET

FIGURE 7



PROCEDURE NO. 7  
SAMPLING PROTOCOL

1. Introduction

This procedure presents information on the proper identification, handling and shipping of samples, as well as methods which provided proper documentation, chain-of-custody and sample analysis requests.

2. Identification

Sample Nomenclature System

A nomenclature system was used to identify each collected sample. This system provided a tracking number by which to retrieve and cross-reference sample information. A listing of the sample identification numbers with written descriptions of the sample location, type, and date was maintained by the sample team leader. Each sample was composed of four components, as described below.

Site Code - Each sample was prefaced with "WR", which specified the Wayne Reclamation and Recycling Site.

Sample Type - Each sample type collected during the sampling program was identified by a two-digit activity code as follows:

SD	Sediment
SB	Soil Borings (Subsurface Soil Sample)
SS	Surface Soil Sample
SW	Surface Water
PW	Residential Well (Private Well)
GW	Monitoring Well (Groundwater Sample)
MW	Municipal Well (City Water Supply Sample)

Sample Site Number - The third component was a two or three digit serial number. This number denoted the site of sampling activity.

Sample Serial Number - The fourth component was a two digit serial number. The serial number was used to identify specific samples collected per sampling site and sample type. For soil samples, this number was indicative of the depth of that sample. For water samples, it signified the round of sampling (the sample round number was prefaced by a 91 to indicate that sample was a duplicate during the first round).



Example: WR-MW-10-02

WR - Site Code - Wayne Reclamation and Recycling Site  
GW - Sample Type - Monitoring Well  
10 - Sample Site Number - Well Number 10  
02 - Sample Serial Number - Second Round of Sampling

#### Sample Labels and Sample Seals

Sample labels were prepared to prevent the misidentification of samples. Gummed paper labels and tags were used and included the following information:

- sample identifier
- name of collector and signature
- date and time of collection
- project name and number
- laboratory analysis request

Labels were affixed to sample bottles prior to the sampling. Tags were attached to bottles prior to packing and shipment.

### 3. Handling and Shipping

#### Sample Preservation

The collected samples were kept out of direct sunlight and, after decontamination and labeling, were placed in containers and stored on ice until they were packaged for shipping to the analytical laboratory. Samples were shipped by overnight delivery to the analytical laboratory on the day of sampling in shipping containers cooled with ice.

#### Shipping Requirements

The packaging, marking, labeling and shipping of samples was intended to be in compliance with Department of Transportation regulations governing the shipment of hazardous wastes. The samples were packaged and shipped by Warzyn according to the following protocol.

- Samples were collected and properly labeled.
- Each sample bottle cap or lid was sealed by taping.
- Each sample bottle was placed in a plastic bag and sealed.



- Each sample bottle was placed inside an approved container (e.g., shipping cooler) which was filled with vermiculite to prevent sample bottle breakage. Each container was sealed with tape to hold the lid securely closed.
- Each cooler was sealed with custody tape to assure that no unauthorized tampering of samples occurred during shipment.

#### 4. Documentation

##### Field Notebook

Field sampling activities were documented through written entries in a field notebook or Daily Activity Report. Field activities were logged in a daily and an event-oriented basis.

Entries were as detailed as possible so that, if necessary at a later date, the reader could reconstruct each event without reliance on the memories of field team members.

Entries into the notebook contained a variety of information, such as: date, start time, weather conditions, field personnel present, level of personnel protection used on-site, daily activities and events, phone call notes, names of visitors to the site and the purpose of their visit.

Measurements made and samples collected were recorded. Entries were made in ink and erasures were not made. If an incorrect entry was made, the information was crossed out with a single strike mark. Equipment used to make measurements was identified, along with dates of calibration.

The equipment used to collect samples was noted, along with the time of sampling, sample description, depth at which the sample was collected, volume and number of containers.

A summary of the information entered, where appropriate, in each field book or data sheet entry is as follows:

- Sampler's name
- Time and date
- Sample location



- Sample identifier
- Type of analysis
- Unusual conditions concerning the sample, i.e., color, odor, solids
- Groundwater level prior to sampling
- Amount of water purged prior to sampling
- Field conditions (weather, air temperature)
- Sampling technique and equipment used
- Indicator parameters measured in the field

#### Chain-of-Custody Documentation

The chain-of-custody record was filled out at the time of sampling, in order to document the history of each sample from the time of sampling through analysis and final disposal. The chain-of-custody record was filled out and accompanied every sample.

The record contained the following information:

- sample identifier
- signature of collector(s)
- date and time of collection
- project name and number
- a list of analyses required
- signature(s) of persons involved in the chain of possession
- inclusive dates of possession

A copy of the standard chain-of-custody form used is included as Figure 8.

The chain-of-custody form accompanied the samples during transportation to the carrier and ultimately, to the laboratory. The chain-of-custody form was signed by a Warzyn representative, sealed in a plastic bag, and placed in the shipping container prior to sealing the container for shipment. Each person





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University Research Park  
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Madison, Wisconsin 53705  
(608) 273-0440

# CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CON- TAINERS	REMARKS													
		LOCATION:																		
SAMPLERS: (Signature)																				
LAB NO.	DATE	TIME	COMP.	CRAB	STATION LOCATION															
Relinquished by: (Signature)			Date / Time		Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)							
Relinquished by: (Signature)			Date / Time		Received by: (Signature)			Relinquished by: (Signature)			Date / Time		Received by: (Signature)							
Relinquished by: (Signature)			Date / Time		Received for Laboratory by: (Signature)						Date / Time									
Remarks						PROJECT MANAGER:														

FIGURE 8

accepting responsibility for the sample(s) signed and dated the form on the date accepted and the date relinquished. The carrier was excluded from signing for custody of the samples, as each shipping container was sealed prior to the carriers arrival. In the laboratory, the samples were under the supervision of a custodian at all times except when the samples were being analyzed.

## APPENDIX B

### SOIL BORING LOGS

B-1

PHASE I AND II BORING LOGS

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB001**Surface Elevation 837.7Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	M	4		Brown Fine Sandy SILT (ML/SM).		0.0			
2		8	M	11				0.0			
3		14	M	38	5	Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
4		16	M	31				0.0			
5		18	M	70	10			0.0			
						End of Boring at 10.0 Feet.					
						Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/23/88 End 2/23/88  
Driller \_\_\_\_\_ Chief CB Rig D50B  
Logger TJM Editor TJM  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

MW-7S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

 Boring No. **SB002**  
 Surface Elevation **838.2**  
 Job No. **60128**  
 Sheet **1** of **1**

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SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		12	M	14		Black Organic SILT, Topsoil (OL).		0.0			
2		15	M	7		Brown Fine Sandy SILT (ML/SM).		0.0			
3		18	W	8				0.0			
4		16	M	14				0.0			
5		15	M	68		Brown Silty CLAY, Little Fine to Coarse Sand, Trace Small to Coarse Gravel (ML-CL).	(4.5)	0.0			
6		18	M	40		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
7		18	M	70				(3.5)	0.0		
8		18	W	27		Gray Fine to Medium SAND (SP).		0.0			
9		14	W	106					0.0		
						End of Boring at 31.0 Feet.					
						Installed Well MW-7S at 30.4 Feet.					

## WATER LEVEL OBSERVATIONS

 While Drilling  $\nabla$  23.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

 Start 2/24/88 End 2/24/88  
 Driller \_\_\_\_\_ Chief KM Rig CME  
 Logger TJM Editor TJM 55  
 Drill Method 4 1/4" HSA 0-31'



## Project Wayne Reclamation & Recycling

Boring No. **SB002E**  
Surface Elevation **838.3**  
Job No. **60128**  
Sheet **1** of **1**

## SAMPLE

## SOIL PROPERTIES

VISUAL CLASSIFICATION						and Remarks					qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox	
No.	TYPE	Rec (in.)	Moist	N	Depth											
1		22	D	16												
2		17	M	5	5											
3		22	M	26												
4			M/W	28												
					10											
					15											
					20											
					25											
					30											
					35											
					40											
		</														

## GENERAL NOTES

Start 7/29/88 End 7/29/88  
Driller KT Chief Rig CME  
Logger DSP Editor TJM 55  
Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB002S**Surface Elevation 838.2Job No. 60128Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					Black Organic SILT, Topsoil (OL).					
1		16	D/M	3	Very Loose Brown Fine SAND, Trace Medium and Coarse Sand (SP).		0.0			
2		23	M	26	Hard Brown CLAY, Trace Coarse Sand and Pebbles Disappering with depth. Color change to Gray with depth (CL). Becoming Silty at 8.0 Feet.	(>4.5)	0.0			
3			M	19		(4.25/>4.5)	0.0			
4		23	M	19		(>4.5)	0.0			
					End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ **DRY** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

**GENERAL NOTES**

Start 7/29/88 End 7/29/88  
Driller **KT** Chief **RigCME**  
Logger **DSP** Editor **TJM** **55**  
Drill Method **4.25" ID HSA 0-10'**

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB002W**Surface Elevation **838.4**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
						Black Organic SILT, Topsoil (OL).					
1		20	D/M	6		Very Loose Brown Fine SAND, Trace Medium Sand (SP).		0.0			
2		20	M	9	5	Increasing Clay with depth.		0.0			
3		20	M	8		Trace Coarse Sand at top, Gone with depth.		0.0			
4		22	M	26	10	Wet at 7.1 Feet, Clay changes to Silt with depth, Little Silt.	(>4.5)	0.0			
						Hard Brown CLAY, Trace Medium Sand. Color Change to Gray with Depth (CL).					
					15	End Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

Start 7/29/88 End 7/29/88  
 Driller KT Chief Rig CME  
 Logger DSP Editor TJM 55  
 Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB003**Surface Elevation 836.7Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1			M			Dark Brown Lean CLAY (CL).		0.0			
2		12	M	10		Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
3		18	M	45	5			0.0			
4			M					0.0			
5		18	M	9	10			0.0			
					10	End of Boring at 10.0 Feet.					
						Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/24/88 End 2/24/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger TJM Editor TJM 55  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. SB004

Surface Elevation 821.9

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		12	M	11		FILL: Black to Dark Brown Silty Fine to Coarse SAND, Trace Fine to Coarse Gravel (SM).		0.0			
2		14	M	7				0.0			
3			M	11	5	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4			W	11				0.0			
					10	End of Boring at 8.0 Feet.  Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

## WATER LEVEL OBSERVATIONS

While Drilling 6.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/23/88 End 2/23/88  
Driller Chief CB Rig D50B  
Logger TJM Editor TJM  
Drill Method 4 1/4" HSA 0-8'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB005**Surface Elevation **823.8**Job No. **60128**Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	14	Black Sandy SILT, Topsoil (OL).		0.0			
2		12	M	8	Brown Fine SAND (SP).		0.0			
3		18	M	35	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4		18	M	25	Gray Fine to Medium SAND (SP).		0.0			
5		12	W	22	Brown Fine SAND, Some Silt (SM).		0.0			
					End of Boring at 10.0 Feet.					
					Borehole Backfilled with Bentonite.					

**WATER LEVEL OBSERVATIONS**

While Drilling  $\nabla$  8.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 2/28/88 End 2/28/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger TJM Editor TJM 55  
Drill Method 4 1/4" HSA 0-10'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB006**Surface Elevation **826.2**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	M	7		Black Sandy TOPSOIL (OL).		0.0			
2	14	M	9		FILL: Black Fine to Medium SAND.		0.0			
3	14	M	17	5	Brown Fine to Medium SAND (SP), Thin Silty Clay Seams at 5.5-8.0 Feet.		0.0			
4	2	M	17				0.0			
5	14	M	54		3" Spoon used at 8.0-10.0 Feet.		0.0			
				10	End of Boring at 10.0 Feet.					
					Borehole Backfilled with Bentonite.					
				15						
				20						
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/29/88 End 2/29/88  
Driller Chief CB Rig D50B  
Logger Editor  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB007

Surface Elevation 827.1

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	22	FILL: Black Silty TOPSOIL (OL).		0.0			
2		10	M	5	FILL: Black & Brown Silty Fine to Medium SAND, Little Fine to Coarse Gravel (SM).		0.0			
3		15	M	6	Brown Fine Sandy SILT (ML/SM).		0.0			
4		12	M	15	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
5		18	M	51	Gray SILT, Some Clay (ML-CL).					
6		18	W	21	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
7		12	W	26			0.0			
					End of Boring at 20.0 Feet.					
					Installed Well MW-9S at 18.0 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  10.3 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.

## GENERAL NOTES

Start 2/28/88 End 2/28/88  
 Driller Chief KM RigCME  
 Logger Editor 55  
 Drill Method 4 1/4" HSA 0-20'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB007E**Surface Elevation **827.0**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
						FILL: Loose Dark Brown to Black Silty Sand and Gravel (SW/SP).					
1		20	M	7							
2		18	M	9	5	FILL: Loose Black Ash and Cinder. Soft Brown Lean CLAY (CL).		0.0			
3		12	W	3		Loose Gray Fine SAND, Some Silt (SP). Color change to Rust Brown, Fine to Coarse Sand, Trace to Little Silt.		0.0			
4			W					0.0			
					10	Medium Gray Lean CLAY (CL).					
						Medium Dense Gray Fine to Coarse SAND (SP)					
					15						
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88  
 Driller KT Chief Rig CME  
 Logger TJM Editor DSP 55  
 Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

# LOG OF TEST BORING

## Project Wayne Reclamation & Recycling

**Location** ..... **Columbia City, Indiana**




Boring No. **SB007N**

Surface Elevation 828.1


Job No. **60128**

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N			Depth	qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
							FILL: Loose Black Sand and Gravel.					
1		18	M	5								
2		24	M	8	5		Loose Rust Brown Fine to Medium SAND, Little to Some Silt (SP).		0.0			
3			M	2			Medium Dark Brown to Black Silty CLAY (ML/CL).		0.0			
4			W						0.0			
					10		Medium Dense Gray Fine to Coarse SAND (SP).		0.0			
							End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15							
					20							
					25							
					30							
					35							
					40							

## WATER LEVEL OBSERVATIONS

While Drilling  NM Upon Completion of Drilling \_\_\_\_\_

Time After Drilling \_\_\_\_\_

Depth to Water \_\_\_\_\_

Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/30/88 End 7/30/88  
Driller KT Chief Rig CME  
Logger TJM Editor DSP 55  
Drill Method 4.25" ID HSA 0-10'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB007W**Surface Elevation **827.7**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
						FILL: Loose Dark Brown Silty Sand and Gravel.					
1		12	D	3		FILL: Ash, Cinders, Brown Sandy Clay, Loose.		0.0			
2		19	D	10	5			0.2			
3		23	M	23		Very Loose to Loose Brown-Gray Silty SAND, Iron Stained Inclusions (SM). Dark Gray and Moist at 6.8 Feet.		0.6			
4		14	M	33				5.0			
					10	Loose Brown Medium SAND, Trace Fine Sand, Trace Coarse Sand and Pebbles (SP).					
					15	Medium Dense Gray Fine to Coarse SAND, Trace Gravel (SW).					
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **DRY** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/29/88 End 7/29/88  
Driller **KT** Chief **RigCME**  
Logger **DSP** Editor **55**  
Drill Method **4.25" ID HSA 0-10'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB008**Surface Elevation **829.5**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Expto- sive Gas	Field VOC Water	Mono- tox
1		18	M	48		FILL: Oil Stained Gravel Pavement.		1.0			
2		14	M	17		FILL: Black Fine to Coarse Sand and Gravel, (Oil Stained).		0.0			
3		18	M	25	5	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
4		16	M	16				0.0			
5		16	M	32		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
					10	End of Boring at 10.0 Feet.  Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start **2/29/88** End **2/29/88**  
Driller \_\_\_\_\_ Chief **CB** Rig **D50B**  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method **4 1/4" HSA 0-10'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB009**Surface Elevation **825.5**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	25		FILL: Dark Brown Silty CLAY (ML-CL). Brown Fine Sandy SILT (ML/SM).		0.0			
2		12	M	10				0.0			
3		16	M	33	5	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4		12	M	35				0.0			
5		14	M	23	10	Gray SILT, Some Clay (ML-CL).		0.0			
						End of Boring at 10.0 Feet.  Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/27/88 End 2/27/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB010**Surface Elevation **825.8**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	18	M	34			(2.5)	0.0			
2	16	M	10				1.4			
3	8	M	4	5	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4	12	M	36				1.4			
5	10	M	72	10	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
					End of Boring at 10.0 Feet.					
					Borehole Backfilled with Bentonite.					
				15						
				20						
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start **2/26/88** End **2/26/88**  
Driller \_\_\_\_\_ Chief **KM** Rig **CME**  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ **55**  
Drill Method **4 1/4" HSA 0-10'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB011**Surface Elevation **826.7**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explosive Gas	Field VOC Water	Mono- tox
1		18	M	27		Brown Fine Sandy SILT (ML/SM).	(3.0)	0.0			
2		18	M	18			0.0				
3		18	M	40	5	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM)	0.0				
4		18	M	54			0.0				
5		18	W	73	10		0.0				
					10	End of Boring at 10.0 Feet.					
						Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling 10.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/26/88 End 2/26/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB012**Surface Elevation **825.6**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo sive Gas	Field VOC Water	Mono- tox
1		16	M	25		Black Organic CLAY, Topsoil (OL).					
2		18	M	20		Brown Fine Sandy SILT (ML/SM).		0.0			
3		18	M	24				0.0			
4		16	M	28		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		20.0			
5		18	W	64				10.0			
								7.0			
					10	End of Boring at 10.0 Feet.					
						Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling 10.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/26/88 End 2/26/88  
Driller \_\_\_\_\_ Chief CB Rig D50B  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB013**Surface Elevation 832.7Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	25		FILL: Black Sandy Silt Topsoil.		0.2			
2		14	M	8		Brown Fine Sandy SILT (ML/SM). Gray SILT, Some Clay (ML-CL).		0.2			
3		6	W	12	5	Municipal REFUSE		0.0			
					10	End of Boring at 8.0 Feet. Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling 6.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/29/88 End 2/29/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
Drill Method 4 1/4" HSA 0-8'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB014

Surface Elevation 837.0

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	M	15		Black Organic SILT, Topsoil (OL).		0.0			
2	16	M	11		Brown Fine Sandy SILT (ML/SM).		0.0			
3	16	M	21	5			0.0			
4	12	M	6		Orange Brown Fine SAND (SP).		0.0			
5	14	M	13	10	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
6		M		15			0.0			
7	18	W	24	20			0.0			
				25			0.0			
				30	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
				35	End of Boring at 30.0 Feet.  Installed Well MW-8S at 27.7 Feet.					
				40						

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  19.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

## GENERAL NOTES

Start 2/27/88 End 2/27/88  
 Driller Chief KM Rig CME  
 Logger Editor 55  
 Drill Method 4 1/4" HSA 0-30'

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB015**Surface Elevation 824.5Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		12	M	31		FILL: Dark Brown CLAY, Topsoil (OL). FILL: Black Fly Ash.		0.0			
2		16	M	9		Brown Fine Sandy SILT (ML/SM).		0.0			
3		18	M	9	5	Brown Fine SAND (SP).		0.0			
4		12	W	38		Gray-Brown Fine to Coarse SAND, Some		0.0			
5		12	W	60		Fine to Coarse Gravel (SW/SP).		0.0			
					10	End of Boring at 10.0 Feet.  Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling 8.0 Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/27/88 End 2/27/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB016

Surface Elevation 827.0

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		15	M	23	Brown Fine Sandy SILT (ML/SM).		0.0			
2		16	M	14			1.0			
3		18	M	29			0.0			
4		12	M	24	Brown Fine to Coarse SAND, Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
5		18	M	35			0.0			
					Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).					
6		18	W	28			0.0			
7		16	W	42	End of Boring at 23.0 Feet.  Installed Well MW-2S at 20.1 Feet.		0.0			

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  11.5 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

## GENERAL NOTES

Start 2/26/88 End 2/26/88  
 Driller Chief KM Rig CME  
 Logger Editor 55  
 Drill Method 4 1/4" HSA 0-23'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB017**Surface Elevation **838.6**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	12	M	53		FILL: Dark Brown Silty CLAY, Some Refuse Debris, Iron, and Glass (ML-CL).		0.0			
2		M	100				0.0			
3	12	M	36		FILL: Black to Dark Brown Silty Fine to Coarse SAND, Trace Fine to Coarse Gravel (SM) (Incinerator Ash).		0.0			
4	8	M	23				0.0			
5	18	M	18		Brown Fine to Medium SAND, Some Silt (SM).		0.0			
				10						
				15	End of Boring at 10.0 Feet.					
				20	Borehole Backfilled with Bentonite.					
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

Start 2/25/88 End 2/25/88  
 Driller \_\_\_\_\_ Chief KM Rig CME  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
 Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB017A**Surface Elevation **838.4**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					FILL: Dark Brown Sandy SILT, Topsoil.					
1	13	D	57		FILL: Brown Sandy Clay with Glass, Ash, and Metal Debris.		0.0			
2	2	D	16	5	Some Oil Staining Possible.					
3	7	M/W	2		Oil Staining and Glass gone at 4.0 Feet.		0.0			
4	0	M/W	10		Metal Debris gone, Black Oil Prominent, Some Bright Orange Ash mixed in at 6.0 Feet.					
5	7	M/W	NM	10	Fuel Oil Odor at 10.0 Feet.		0.5			
					Fine Brown Sand at Bottom (0.4 Feet Thick).					
				15	End of Boring at 11.5 Feet. Borehole Backfilled with Bentonite and Cuttings.					
				20						
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/29/88 End 7/29/88  
Driller KT Chief Rig CME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-11.5'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

# WARZYN



# LOG OF TEST BORING

## Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. **SB018**

Surface Elevation 839.9

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	M	20		FILL: Black Organic CLAY, Topsoil (OL).		0.0			
2		16	M	10				0.0			
3		14	M	19	5	FILL: Black to Dark Brown Silty Fine to Coarse SAND, Trace Fine to Coarse Gravel with Glass, Metal and Slag (SM).		0.5			
4		18	M	11		Brown Fine Sandy SILT (ML/SM).		0.5			
5		14	M	12		Brown Fine SAND (SP).		2.0			
					10						
6		18	M	22		Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
					15						
7		18	M	20		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
					20						
8		18	M	20				0.0			
					25						
9		16	W	67		Gray Fine to Medium SAND (SP).		0.0			
					30						
					35						
						End of Boring at 35.0 Feet.					
						Installed Well MW-1S at 34.8 Feet.					
					40						

## WATER LEVEL OBSERVATIONS

While Drilling 30.0 Upon Completion of Drilling \_\_\_\_\_

Time After Drilling \_\_\_\_\_

Depth to Water \_\_\_\_\_

Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/27/88 End 2/27/88  
Driller Chief CB Rig D50B  
Logger Editor  
Drill Method 4 1/4" HSA 0-35'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB018A**Surface Elevation **839.4**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HMU	Explo- sive Gas	Field VOC Water	Mono- tox
						FILL: Black Organic Clay, Topsoil (OL).					
1		16	D/M	4		Loose Brown Fine Sandy CLAY (SC).		0.2			
2		20	M	17	5	Loose Gray Fine SAND, Oil Staining at 2.8 Feet (SP).		0.0			
3		22	M	13		Very Soft Gray-Green Fine Sandy SILT (SM).		0.0			
4		22	M	12				0.0			
					10	Medium Dense Gray-Green Fine SAND, Little to Some Silt (SP). Black-Gray with depth, Trace Coarse Sand at 8.0 Feet.					
					15	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **DRY** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/28/88 End 7/28/88  
Driller KT Chief RigCME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **SB019**  
 Surface Elevation **840.5**  
 Job No. **60128**  
 Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	M	7	FILL: Brown Fine Sandy SILT (ML/SM) with Wood, Metal, Wire and Plastic.		0.0			
2		16	M	17			0.0			
3		8	W	16			0.0			
4		12	M	7	FILL: Dark Gray to Black Silty CLAY (ML-CL).		0.0			
5		8	M	12			0.0			
					Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
6		18	M	28	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
7		18	M	43			0.0			
8		18	M	34	Gray Fine to Medium SAND (SP).		0.0			
9		18	W	20			0.0			
10		18	W	60			0.0			
					End of Boring at 37.0 Feet. Installed Well MW-4S at 34.1 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  7.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.

## GENERAL NOTES

Start 2/24/88 End 2/24/88  
 Driller Chief CB Rig D50B  
 Logger Editor  
 Drill Method 4 1/4" HSA 0-37'

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB020

Surface Elevation 838.8

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1	14	M	80		FILL: Black Fine to Coarse Sand and Gravel.		0.0			
2	18	M	28		Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
3	18	M	29	5			0.0			
4	18	M	20				0.0			
5	18	M	23	10			0.0			
				15			0.0			
6	18	M	27		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
7	18	M	34	20			0.0			
				25	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
8	18	M	29				0.0			
				30	Gray Fine to Medium SAND (SP).		0.0			
9	18	W	12				0.0			
				35	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
10	18	W	18				0.0			
				40	Installed Well MW-6S at 39.1 Feet. End of Boring at 40.0 Feet.		0.0			
11	18	W	22				0.0			

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  28.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/25/88 End 2/25/88  
 Driller Chief CB Rig D50B  
 Logger Editor  
 Drill Method 4 1/4" HSA 0-40'

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB021

Surface Elevation 825.5

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	12	M	23		Dark Brown Organic SILT, Topsoil (OL). Brown Fine Sandy SILT (ML/SM).		0.0			
2	6	M	12				0.0			
3	18	M	35	5	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		20.0			
4	18	M	50				40.0			
5	18	W	67	10			20.0			
				15			0.0			
6	14	W	36		End of Boring at 16 Feet.  Installed Well MW-10S at 15.8 Feet.					
				20						
				25						
				30						
				35						
				40						

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  8.5 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/25/88 End 2/25/88  
 Driller Chief KM Rig CME  
 Logger Editor 55  
 Drill Method 4 1/4" HSA 0-16'

MW-3S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

 Boring No. **SB022**  
 Surface Elevation **825.8**  
 Job No. **60128**  
 Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	M	21		Brown Fine Sandy SILT (ML/SM).		0.0			
2	16	M	9		Gray SILT, Some Clay (ML-CL).		0.0			
3	18	M	15	5	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4	16	M	19		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Small to Large Gravel (ML-CL).		0.0			
5	16	M	39	10			0.0			
6	14	W	4	15	Gray-Brown Fine to Coarse SAND, Some Small to Large Gravel (SW/SP).		0.0			
7	16	M	21	20	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
					End of Boring at 20.0 Feet.					
					Installed Well MW-3S at 17.8 Feet.					

## WATER LEVEL OBSERVATIONS

 While Drilling  $\nabla$  12.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

 Start 2/28/88 End 2/28/88  
 Driller \_\_\_\_\_ Chief CB Rig D50B  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method 4 1/4" HSA 0-20'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB023**Surface Elevation **826.2**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	10		Brown Fine Sandy SILT (ML/SM).		0.0			
2		14	M	12				0.0			
3		8	M	100	5	Cobble at 5'		0.0			
4		18	M	27		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
5		16	M	41	10	End of Boring at 10.0 Feet.		0.0			
						Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start **2/27/88** End **2/27/88**  
Driller \_\_\_\_\_ Chief **KM** Rig **CME**  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ **55**  
Drill Method **4 1/4" HSA 0-10'**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB024**  
Surface Elevation **827.3**  
Job No. **60128**  
Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	M	12		Black Organic CLAY Topsoil (OL).		0.0			
2	16	M	8		Brown Fine Sandy SILT (ML/SM).		0.0			
3	16	M	15	5	Brown Fine SAND (SP).		0.0			
4	18	M	13		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
5	14	M	28	10	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
				15	End of Boring at 10.0 Feet.					
				20	Borehole Backfilled with Bentonite.					
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**While Drilling 23 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_Start 2/28/88 End 2/28/88  
Driller \_\_\_\_\_ Chief CB Rig D50B  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

# WARZYN



# LOG OF TEST BORING

## Project Wayne Reclamation & Recycling

Location Columbia City, Indiana







Boring No. **SB025**

Surface Elevation 834.6

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N			Depth	qu (qa) (tsf)	HMu	Explo- sive Gas	Field VOC Water	Mono- tox
1		12	W				Dark Brown Organic CLAY Topsoil (OL).					
2		12	M							0.0		
3		15	M	35	5		Gray Fine to Medium SAND (SP).					
4		12	M	6					0.1			
5		14	M						0.0			
					10		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).					
6		16	M	35					0.0			
					15							
					20		Gray SILT, Some Clay (ML-CL).					
7		18	W	11			Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).					
					25				0.0			
8		18	W	17			End of Boring at 25.0 Feet.					
					30		Installed Well MW-5S at 25.0 Feet.					
					35							
					40							

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  18.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/23/88 End 2/23/88  
Driller Chief KM Rig CME  
Logger Editor 55  
Drill Method 4 1/4" HSA 0-25'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB026**Surface Elevation **835.9**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		18	M	21		Black Organic SILT Topsoil (OL). Brown Fine Sandy SILT (ML/SM).		0.0			
2		16	M	11				0.0			
3		14	M	14	5	Gray SILT, Some Clay (ML-CL).		0.0			
4		18	M	37		Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
5		16	M	50	10			0.0			
						End of Boring at 10.0 Feet.  Borehole Backfilled with Bentonite.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 2/29/88 End 2/29/88  
Driller \_\_\_\_\_ Chief KM Rig CME  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
Drill Method 4 1/4" HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, Indiana
 Boring No. **SB027**  
 Surface Elevation **827.4**  
 Job No. **60128**  
 Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	D	13		Brown Clayey Fine to Medium SAND, Little Fine Gravel (SM/SP).		0.0			
2		16	D	25	5	Increased Amount of Clay at 4.0 feet. Also More Dense.		1.0			
3		16	D	32		Brown to Gray Fine to Coarse SAND, Trace to Little Fine to Medium Gravel (SW/SP).		2.0			
4		16	D	31	10	Increased Amount of Coarse Sand and Gravel at 8.0 feet.		1.0			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.		0.0			
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**
 While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

 Start 7/31/88 End 7/31/88  
 Driller KEN Chief TJM Rig CME55  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method \_\_\_\_\_

 The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB028**Surface Elevation 826.4Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	D	16		Brown Sandy CLAY, Trace to Little Fine Gravel (SC/SM).		0.0			
2	14	D	23	5			0.0			
3	16	D	18		Brown and Gray Fine to Coarse SAND, Some Fine to Medium Gravel (SW/SP).		0.0			
4	16	D/M	17				0.4			
				10	Gray Silty CLAY, Trace Fine Gravel (CL).					
					End of Boring at 10.0 Feet Borehole Backfilled with Bentonite and Cuttings.					
				15						
				20						
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/31/88 End 7/31/88  
Driller KEN Chief TJM Rig CME55  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB029**Surface Elevation **825.9**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Hono- tox
						Brown Clayey Fine to Medium SAND, Little to Some Silt (SC/SM).					
1		14	D	15				0.0			
2		16	D	14	5	Interbedding of Fine and Coarse Sand Between 4.0-5.0 feet.		0.2			
3		16	D	23				2.0			
4		16	D/W	17		Brown to Gray Fine to Medium SAND, Trace Fine to Coarse Gravel (SW/SP). Increased Grain Size at 6.0-6.5 feet.		3.5			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling  $\nabla$  9.5 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/31/88 End 7/31/88  
Driller KEN Chief TJM Rig CME55  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



## Project Wayne Reclamation & Recycling

Boring No. **SB030**  
Surface Elevation **824.7**  
Job No. **60128**  
Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N			Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water
						Brown Silty CLAY, Little Fine to Coarse Sand and Trace Fine Gravel (CL/SC).					
1		12	D	11				1.0			
2		14	D	21	5	Brown to Gray Fine to Coarse SAND, Little to Some Fine to Medium Gravel (SW/SP).		4.0			
3		16	D	33				6.0			
4		18	D/M	38				10.0			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

## GENERAL NOTES

While Drilling 9.5 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

Start 7/31/88 End 7/31/88  
Driller KEN Chief TJM Rig CME55  
Logger Editor  
Drill Method

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB031**Surface Elevation **828.9**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	D	13		Brown Clayey Fine to Medium SAND, Some Fine to Medium Gravel (SC/SM).		2.0			
2		16	D	24	5			5.0			
3		16	D	23		Brown to Gray Fine to Coarse SAND, Little to Some Fine to Coarse Gravel (SW/SP).		3.0			
4		16	D	22		Trace of Fine Sand Layers at 9.0 feet.		1.5			
					10	End of Boring at 10.0 Feet Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/31/88 End 7/31/88  
Driller KEN Chief TJM Rig CME55  
Logger Editor  
Drill Method \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB032**  
Surface Elevation **824.4**  
Job No. **60128**  
Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					Dark Brown Sandy SILT, Topsoil (ML/SM).					
1		17	D/M	11	Hard Brown-Gray Fine SANDY CLAY (SC).	(0.0/>4.5)	0.0			
2		13	D/M	34	Loose Brown Fine SAND, Grading to Medium Sand with depth, Trace Coarse Sand with depth (SP).		0.0			
3		16	M	25			0.2			
4		16	W	23	Dense Gray Fine to Coarse SAND, Trace Gravel (SW). Wet at 8.8 Feet.		0.4			
					End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					

**WATER LEVEL OBSERVATIONS**While Drilling  $\nabla$  **8.8** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.**GENERAL NOTES**Start **8/1/88** End **8/1/88**  
Driller **KT** Chief \_\_\_\_\_ Rig **CME**  
Logger **DSP** Editor \_\_\_\_\_ **55**  
Drill Method **4.25" ID HSA 0-10'**



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. **SB033**  
Surface Elevation **824.6**  
Job No. **60128**  
Sheet **1** of **1**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
					Dark Brown Sandy SILT, Topsoil (ML/SM)					
1		16	D/M	3	Very Loose Brown-Gray Fine SAND, Little Clay decreasing with depth (SP).		10.0			
2		13	M	31			3.0			
3		19	M	16	Medium Dense Gray Fine to Coarse SAND, Trace Gravel (SW).		25.0			
4			M	17	Loose Brown Fine to Medium SAND (SP).		19.0			
					Trace to Little Pebbles and Coarse Sand with depth.					
					Medium Dense Brown Fine to Coarse SAND, Trace to Little Pebbles (SW).					
					Gray CLAY, Trace Medium Sand (CL).					
					End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					

## WATER LEVEL OBSERVATIONS

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 8/1/88 End 8/1/88  
Driller KT Chief Rig CME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-10'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB034**Surface Elevation 826.1Job No. **60128**Sheet **1** of **1**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
						Dark Brown Sandy SILT, Topsoil (ML/SM).					
1		22	D	22		Medium Dense Brown Fine SAND, Trace Silt, Root Fibers (SP).		0.2			
2			M	7	5	Gray, Roots Gone at 4.0 Feet. Brown Medium Sand at 4.5 Feet.		0.2			
3		18	M	21		Gray, Little to Some Medium and Coarse Sand, Layered, at 6.6 Feet.		2.0			
4		17	M	38				0.5			
					10						
					15						
					20						
					25						
					30						
					35						
					40						

End of Boring at 10.0 Feet.  
Borehole Backfilled with  
Bentonite and Cuttings.**WATER LEVEL OBSERVATIONS****GENERAL NOTES**While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_Start 8/1/88 End 8/1/88  
Driller KT Chief \_\_\_\_\_ Rig CME  
Logger DSP Editor \_\_\_\_\_ 55  
Drill Method 4.25" ID HSA 0-10'The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB035**Surface Elevation 825.5Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
					Dark Brown Sandy SILT, Topsoil (ML/SM).					
1	20	D	13		Medium Dense Brown Fine SAND, Little Silt (SP).		0.0			
2	17	D	7	5	Gray-Brown, Iron Stained Inclusions, Trace Coarse Sand with depth, Some Clay decreasing with depth.		0.3			
3	18	M	36				2.0			
4	17	M/W	43		Loose Gray SILT (ML).		1.0			
				10	Loose Gray Fine SAND (SP).					
				15	Medium Dense Brown-Gray Fine to Coarse SAND, Layered (SW). Dark Gray at 8.0 Feet.					
				20	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 8/1/88 End 8/1/88  
Driller KT Chief RigCME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **SB036**

Surface Elevation 826.1

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					Dark Brown Sandy SILT, Topsoil (ML/SM).					
1	17	M	8		Loose Brown Fine SAND, Trace to Little Silt (SP).		0.5			
2	14	M	8	5	Loose Brown-Gray Fine to Coarse SAND, Trace Pebbles (SW).		8.0			
3	19	M	28		Gray and Silty at 5.75 Feet.		17.0			
4	14	M	47		Loose Brown Medium SAND, Trace Fine and Coarse Sand, Trace Pebbles (SP).		12.0			
				10	Fine and Coarse Sand at 8.0 Feet.					
					End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
				15						
				20						
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 8/1/88 End 8/1/88  
Driller KT Chief RigCME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-10'

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB037**Surface Elevation **827.3**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
						Dark Brown Sandy SILT, Topsoil (ML/SM).					
1		19	M	9		Loose Brown Fine SAND, Little Silt (SP).		0.2			
2		17	M	3	5	Trace Coarse Sand and Pebbles with depth.		1.0			
3		20	M	9				9.0			
4		19	M	32		Medium Dense Gray Fine Silty SAND (SM).					
					10	Loose Brown Fine SAND (SP). Possible Oil Staining at 8.7 Feet.					
					15	Medium Dense Brown Fine to Coarse SAND, Trace Pebbles (SW).					
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 8/1/88 End 8/1/88  
Driller KT Chief Rig CME  
Logger DSP Editor 55  
Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB038**Surface Elevation 826.9Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
						Dark Brown Sandy SILT, Topsoil (ML/SM).					
1		18	D/M	15		Medium Dense Yellow-Brown Fine Clayey SAND, Trace Coarse Sand (SC).		0.0			
2		20	M	15	5	Medium Dense Gray Fine to Coarse SAND, Trace Pebbles, Layered (SW).		0.0			
3		19	M	29				0.0			
4		17	M	50		Brown to Gray at 8.0 Feet.		0.0			
					10						
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 8/1/88 End 8/1/88  
Driller KT Chief \_\_\_\_\_ Rig CME  
Logger DSP Editor \_\_\_\_\_ 55  
Drill Method 4.25" ID HSA 0-10'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**
 Boring No. **SB039**  
 Surface Elevation **825.6**  
 Job No. **60128**  
 Sheet **1** of **2**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					Well Vegetated Topsoil, Dark Brown Sandy SILT (ML/SM).					
1		0	D	13			0.0			
					Loose Brown Fine SAND, Trace Coarse Sand (SP).		0.0			
2		7	D	16			0.0			
					Loose Brown-Gray Fine to Coarse SAND (SW).		0.0			
3		11	D/M	23			0.0			
4		10	D/M	25			0.0			
					Loose Brown-Gray Fine SAND, Trace Medium and Coarse Sand (SP).		0.0			
5		11	M/W	30			0.0			
6		7	M/W	21			0.2			
					Hard Gray CLAY (CL).					
7		14	D/M	37		(>4.5)	0.1			
					Trace Medium to Coarse Sand at 23.5 Feet.		0.1			
8		12	M	37						
					Medium Dense Gray Medium SAND, Trace Silt (SP).		0.0			
9		16	W	52			0.2			
10		13	W	40						
					Change to Fine Sand, Some Silt at 38.9 Feet.		0.0			
11		9	W	30						

**WATER LEVEL OBSERVATIONS**
 While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

 The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.
**GENERAL NOTES**
 Start 7/27/88 End 7/27/88  
 Driller KT Chief Rig CME  
 Logger DSP Editor TJM 55  
 Drill Method 3-7/8" RWB 0 -60'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB039**Surface Elevation **825.6**Job No. **60128**Sheet **2** of **2**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	T P E	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
12		11	W	62	45		0.0			
13		11	W	54	50		0.1			
14		13	W	58	55		0.1			
15			W	58	60					
					65					
					70					
					75					
					80					
					85					

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **SB040**  
Surface Elevation **823.6**  
Job No. **60128**  
Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					Dark Brown Sandy SILT, Topsoil (ML/SM).					
1		12	D/M	14	Very Loose to Loose Brown Fine SAND, Trace Silt (SP). Trace Coarse Sand, Little Gravel after 4.9 Feet. Gravel gone at 6.5 Feet. Gray-Black, Coarse Sand gone, Little Silt at 8.5 Feet.		0.0			
2		11	D/M	18			0.0			
3		1	D/M	27			0.1			
4		12	W	20			0.0			
5		16	W	21	Black, Trace Silt, Possible Organic Odor at 11.0 Feet. Gray, Little to Some Medium and Coarse Sand at 13.5 Feet.		0.1			
6		12	W	20			0.2			
7		14	W	42	Trace Medium Sand at 18.5 Feet.		0.0			
8		11	W	21	Medium Dense Gray Fine Silty SAND, Trace Medium Sand (SM).		0.0			
9		16	M	58	Hard Gray Fine Sandy CLAY, Trace Pebbles, Decreasing to Some Sand with depth.	(>4.5)	0.0			
10		0		12						
					End of Boring at 35.0 Feet. Borehole Backfilled with Cuttings and Bentonite Slurry.					

**WATER LEVEL OBSERVATIONS**While Drilling ☒ NM Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.**GENERAL NOTES**Start 7/28/88 End 7/28/88  
Driller KT Chief Rig CME  
Logger DSP Editor TJM 55  
Drill Method 3-7/8" RWB 0 -35'

B-2

PHASE II EXPLORATORY SOIL BORINGS



## LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. SB-A

Surface Elevation 824.9

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					Brown Sandy CLAY (SC).					
				5	Brown Fine to Coarse SAND, Trace Fine Gravel (SW/SP).		0.1			
				10	End of Boring at 9.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
				15						
				20						
				25						
				30						
				35						
				40						

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
While Drilling	<input checked="" type="checkbox"/> Dry	Upon Completion of Drilling		Start	7/30/88 End 7/30/88
Time After Drilling				Driller	KT Chief RIG CME55
Depth to Water				Logger	TJM Editor DSP
Depth to Cave in				Drill Method	4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



## Project Wayne Reclamation & Recycling

Location **Columbia City, Indiana**

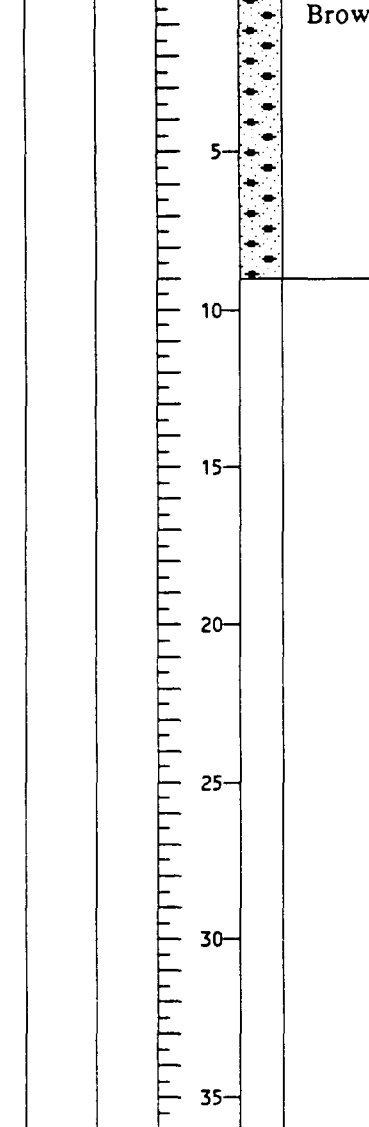
Boring No. **SB-B**

Surface Elevation 824.4

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water
							0.1			
					End of Boring at 9.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					

## GENERAL NOTES

While Drilling ☐ Dry Upon Completion of Drilling           

Time After Drilling \_\_\_\_\_

Depth to Water \_\_\_\_\_

Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88

Driller KT Chief Rig CME55

.....  
**Logger TJM Editor DSP**  
 .....

## Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. SB-C

Surface Elevation 824.1

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
							200.0			

## WATER LEVEL OBSERVATIONS

While Drilling 8.5 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES



Start 7/30/88 End 7/30/88  
 Driller KT Chief \_\_\_\_\_ Rig CME55  
 Logger TJM Editor DSP  
 Drill Method 4" OD FA




## Project Wayne Reclamation & Recycling

Boring No. **SB-D**  
Surface Elevation **826.2**  
Job No. **60128**  
Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water
					 Brown Sandy CLAY (SC).					
					 Brown SAND and GRAVEL (SW/SP).		150.0			
					End of Boring at 13.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					

## GENERAL NOTES

While Drilling  <u>Dry</u>	Upon Completion of Drilling			
Time After Drilling	_____	_____	_____	_____
Depth to Water	_____	_____	_____	_____
Depth to Cave in	_____	_____	_____	_____

Start 7/30/88 End 7/30/88  
Driller KT Chief RigCME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-ESurface Elevation 825.2Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
						Brown SAND and GRAVEL (SW/SP).					
					5	Gray SAND and GRAVEL (SW/SP).		120.0			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88  
Driller KT Chief RigCME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-FSurface Elevation 825.5Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explosive Gas	Field VOC Water
						Brown SAND and GRAVEL (SW/SP)				
					5	Gray Fine to Medium SAND, Some Small Gravel (SW/SP).		160.0		
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.				
					15					
					20					
					25					
					30					
					35					
					40					

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
While Drilling	<input checked="" type="checkbox"/> Dry	Upon Completion of Drilling		Start	7/30/88 End 7/30/88
Time After Drilling				Driller	KT Chief Rig CME55
Depth to Water				Logger	TJM Editor DSP
Depth to Cave in				Drill Method	4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.





**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-1Surface Elevation 828.6Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explosive Gas	Field VOC Water	Mono- tox
					5	Brown SAND and GRAVEL (SW/SP).		10.0			
					10						
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
While Drilling	<input checked="" type="checkbox"/> Dry	Upon Completion of Drilling			Start	7/30/88 End 7/30/88
Time After Drilling					Driller	KT Chief RIG CME55
Depth to Water					Logger	TJM Editor DSP
Depth to Cave in					Drill Method	4" OD FA
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.						



## Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. **SB-J**

Surface Elevation ..... 825.4

Job No. 60128

Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water
							30.0			
<b>WATER LEVEL OBSERVATIONS</b> While Drilling <input checked="" type="checkbox"/> Dry Upon Completion of Drilling _____ Time After Drilling _____ Depth to Water _____ Depth to Cave in _____						<b>GENERAL NOTES</b> Start 7/30/88 End 7/30/88 Driller KT Chief _____ Rig CME55 Logger TJM Editor DSP _____ Drill Method 4" OD FA				

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-KSurface Elevation 825.5Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5	Brown SAND and GRAVEL (SW/SP).		5.0			
					10						
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 7/30/88 End 7/30/88  
Driller KT Chief Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-LSurface Elevation 825.1Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TY P E	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5	Brown-Gray SAND and GRAVEL (SW/SP).		170.0			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

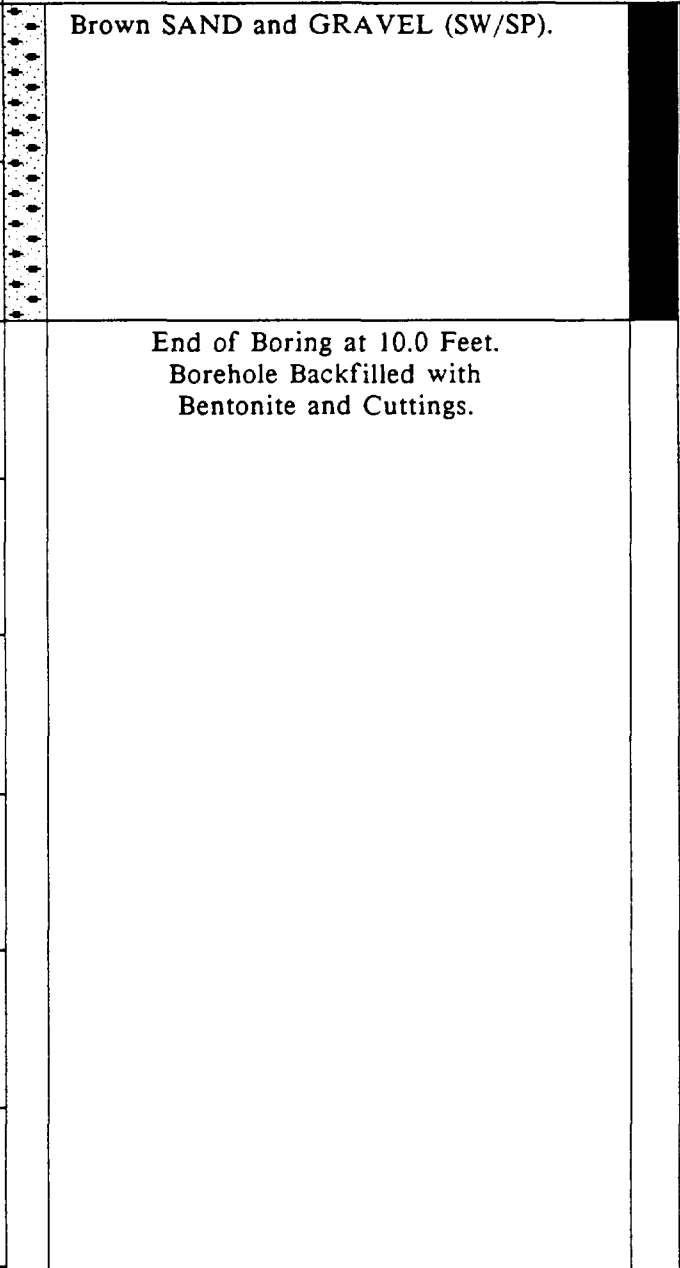
**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88  
Driller KT Chief \_\_\_\_\_ Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Boring No. **SB-M**  
Surface Elevation **826.3**  
Job No. **60128**  
Sheet **1** of **1**

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water
							3.0			
<b>WATER LEVEL OBSERVATIONS</b> While Drilling <input checked="" type="checkbox"/> Dry Upon Completion of Drilling _____ Time After Drilling _____ Depth to Water _____ Depth to Cave in _____						<b>GENERAL NOTES</b> Start 7/30/88 End 7/30/88 Driller KT Chief _____ Rig CME55 Logger TJM Editor DSP _____ Drill Method 4" OD FA _____				

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-NSurface Elevation 826.5Job No. 60128Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
						Brown-Gray Fine to Medium SAND, Trace Small Gravel (SW/SM).		100.0			
					5						
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
While Drilling	<input checked="" type="checkbox"/> Dry	Upon Completion of Drilling		Start	7/30/88 End 7/30/88
Time After Drilling				Driller	KT Chief RIG CME55
Depth to Water				Logger	TJM Editor DSP
Depth to Cave in				Drill Method	4" OD FA
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.					

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-0Surface Elevation 826.4Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5	Brown SAND and GRAVEL (SW/SP).		1.0			
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88  
Driller KT Chief \_\_\_\_\_ Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. **SB-P**Surface Elevation 826.8Job No. 60128Sheet 1 of 1

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5	Brown SAND and GRAVEL (SW/SP).					
					10	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ **Dry** Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/30/88 End 7/30/88  
Driller KT Chief Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-QSurface Elevation 826.5Job No. 60128Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNU	Explosive Gas	Field VOC Water	Mono- tox
					5	Brown Fine to Coarse SAND, Some Gravel (SW/SP).		0.1			
					10						
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 7/30/88 End 7/30/88  
Driller KT Chief RigCME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA



## **Project Wayne Reclamation & Recycling**

**Location** ..... **Columbia City, Indiana**

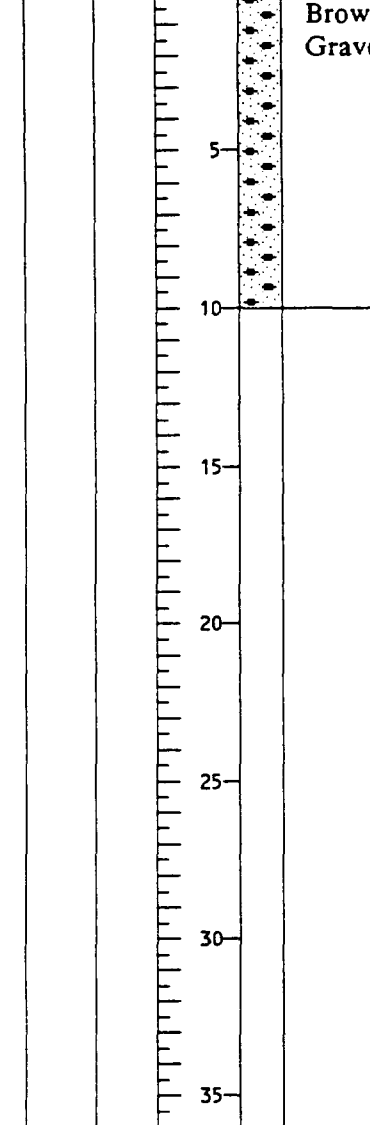
Boring No. **SB-R**

Surface Elevation ..... 827.4


Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES						
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox	
												
							0.1					

## GENERAL NOTES

While Drilling  <u>Dry</u>	Upon Completion of Drilling _____			
Time After Drilling _____	_____	_____	_____	_____
Depth to Water _____	_____	_____	_____	_____
Depth to Cave in _____	_____	_____	_____	_____

Start 7/30/88 End 7/30/88  
Driller KT Chief Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-SSurface Elevation 827.7Job No. 60128Sheet 1 of 1

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
				5	Brown SAND and GRAVEL (SW/SP).		500.0			
				10						
				15	End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
				20						
				25						
				30						
				35						
				40						

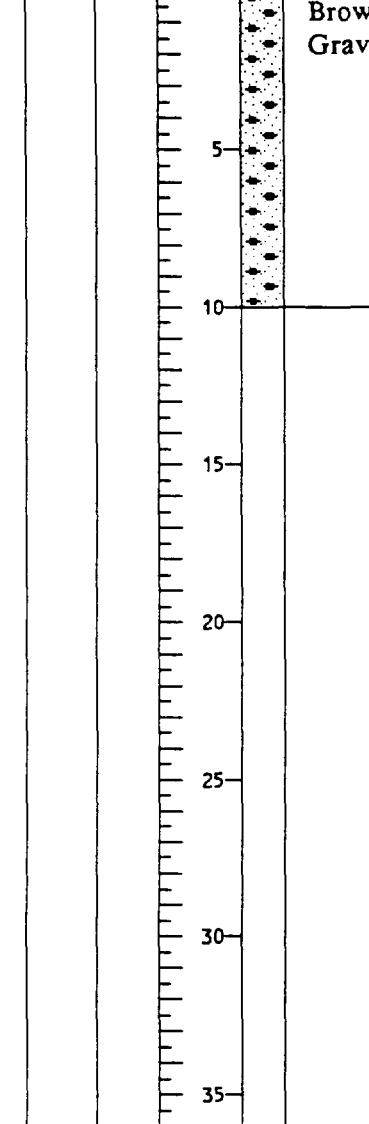
**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_


Start 7/30/88 End 7/30/88  
Driller KT Chief \_\_\_\_\_ Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Boring No. **SB-T**  
Surface Elevation **824.5**  
Job No. **60128**  
Sheet **1** of **1**

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
							1.5				

## WATER LEVEL OBSERVATIONS

While Drilling  <u>Dry</u>	Upon Completion of Drilling _____			
Time After Drilling _____	_____	_____	_____	_____
Depth to Water _____	_____	_____	_____	_____
Depth to Cave in _____	_____	_____	_____	_____

## GENERAL NOTES

Start 7/30/88 End 7/30/88  
Driller KT Chief Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-USurface Elevation 827.7Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water
						FILL: Crushed Stone and Gravel.				
						Brown Silty CLAY (CL).				
					5					
						Brown-Gray Fine to Coarse SAND, Little Gravel (SW/SP).				
					10					
						End of Boring at 10.0 Feet. Borehole Backfilled with Bentonite and Cuttings.				
					15					
					20					
					25					
					30					
					35					
					40					

WATER LEVEL OBSERVATIONS					GENERAL NOTES			
While Drilling	<input checked="" type="checkbox"/> Dry	Upon Completion of Drilling			Start	7/31/88	End	7/31/88
Time After Drilling					Driller	KT	Chief	Rig CME55
Depth to Water					Logger	TJM	Editor	DSP
Depth to Cave in					Drill Method	4" OD FA		

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project Wayne Reclamation & RecyclingLocation Columbia City, IndianaBoring No. SB-VSurface Elevation 825.1Job No. 60128Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5	Brown-Black (possibly stained) Silty CLAY, Little Sand (CL).		20.0			
					10	End of Boring at 6.0 Feet. Borehole Backfilled with Bentonite and Cuttings.					
					15						
					20						
					25						
					30						
					35						
					40						

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ Dry Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start 7/31/88 End 7/31/88  
Driller KT Chief Rig CME55  
Logger TJM Editor DSP  
Drill Method 4" OD FA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## APPENDIX C

### MONITORING WELL INFORMATION

Wayne Reclamation & Recycling RI/FS Site  
Columbia City, Indiana

	MW-1S	MW-1I	MW-1D	MW-2S	MW-3S	MW-4S	
Ground Surface Elevation (ft MSL)	839.9	839.5	839.3	827.0	825.8	840.5	
Total Depth of Boring (ft)	35.0	85.0	150.0	23.0	20.0	37.0	
T.O.I.C. Elevation (ft MSL)	840.97	841.52	841.73	829.75	828.75	842.23	
Well Materials	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	
Screen Material	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	
Screen Length (ft)	10.0	10.0	10.0	10.0	10.0	10.0	
Slot Size (in)	0.010	0.010	0.010	0.010	0.010	0.010	
Geologic Formation	Upper Confining Layer		Lower	Upper	Upper	Upper	
Top of Seal-Depth (ft)	18.0	69.0	135.0	5.5	5.0	19.0	
-Elevation (ft MSL)	821.9	770.5	704.3	821.5	820.8	821.5	
Top of Sand Pack-Depth (ft)	20.0	71.0	137.0	7.5	6.0	20.5	
-Elevation (ft MSL)	819.9	768.5	702.3	819.5	819.8	820.0	
Top of Screen-Depth (ft)	24.3	74.0	138.0	9.6	7.3	23.3	
-Elevation (ft MSL)	815.6	765.5	701.3	817.4	818.5	817.2	
Bottom of Well Point-Depth (ft)	34.8	84.0	148.5	20.1	17.8	34.1	
-Elevation (ft MSL)	805.1	755.5	690.8	806.9	808.0	806.4	
Map Coordinates:	North	923.9249	913.2	904.9	727.4503	421.5912	911.6479
	East	1827.8618	1830.2	1830.1	2097.9879	1811.4428	1662.6159
Completion Date	2-27-88	7-27-88	8-11-88	2-26-88	2-28-88	2-24-88	

## NOTES:

=====

T.O.I.C. - Top of Inner Well Casing  
 ID - Inside Diameter  
 SS - Stainless Steel  
 MSL - Mean Sea Level

Wayne Reclamation & Recycling RI/FS Site  
Columbia City, Indiana

	MW-5S	MW-6S	MW-7S	MW-8S	MW-8D	MW-9S
Ground Surface Elevation (ft MSL)	834.6	838.8	838.2	837.0	836.3	827.1
Total Depth of Boring (ft)	25.0	40.0	31.0	30.0	150.0	20.0
T.O.I.C. Elevation (ft MSL)	837.35	845.42	840.58	838.51	839.91	829.92
Well Materials	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS
Screen Material	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS
Screen Length (ft)	10.0	10.0	10.0	10.0	10.0	10.0
Slot Size (in)	0.010	0.010	0.010	0.010	0.010	0.010
Geologic Formation	Upper	Upper	Upper	Upper	Lower	Upper
Top of Seal-Depth (ft)	11.0	24.0	16.0	12.0	114.0	3.0
-Elevation (ft MSL)	823.6	814.8	822.2	825.0	722.3	824.1
Top of Sand Pack-Depth (ft)	13.0	26.0	17.0	14.0	116.0	5.0
-Elevation (ft MSL)	821.6	812.8	821.2	823.0	720.3	822.1
Top of Screen-Depth (ft)	14.5	28.3	20.3	17.3	138.0	7.8
-Elevation (ft MSL)	820.1	810.5	817.9	819.7	698.3	819.3
Bottom of Well Point-Depth (ft)	25.0	39.1	30.4	27.7	148.5	18.3
-Elevation (ft MSL)	809.6	799.7	807.8	809.3	687.8	808.8
Map Coordinates:						
North	1026.4465	1222.1903	964.3070	676.2802	668.7	403.5055
East	780.3867	2088.0875	1486.4046	1324.0429	1324.8	1194.3813
Completion Date	2-23-88	2-25-88	2-24-88	2-27-88	8-16-88	2-28-88

## NOTES:

=====

T.O.I.C. - Top of Inner Well Casing  
 ID - Inside Diameter  
 SS - Stainless Steel  
 MSL - Mean Sea Level

Wayne Reclamation & Recycling RI/FS Site  
Columbia City, Indiana

	MW-10S	MW-11S	MW-12S	MW-13S	MW-13D	MW-14S
Ground Surface Elevation (ft MSL)	825.5	827.4	825.6	828.3	828.3	823.6
Total Depth of Boring (ft)	16.0	34.0	19.5	25.0	145.0	18.9
T.O.I.C. Elevation (ft MSL)	827.43	829.49	827.18	831.18	830.49	825.76
Well Materials	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS
Screen Material	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS	2"ID SS
Screen Length (ft)	10.0	10.0	10.0	10.0	10.0	10.0
Slot Size (in)	0.010	0.010	0.010	0.010	0.010	0.010
Geologic Formation	Upper	Upper	Upper	Upper	Lower	Upper
Top of Seal-Depth (ft)	2.0	18.0	0.0	7.5	128.0	0.0
-Elevation (ft MSL)	823.5	809.4	825.6	820.8	700.3	823.6
Top of Sand Pack-Depth (ft)	4.0	20.0	7.0	9.5	130.0	8.0
-Elevation (ft MSL)	821.5	807.4	818.6	818.8	698.3	815.6
Top of Screen-Depth (ft)	5.3	23.3	9.0	12.2	134.0	8.4
-Elevation (ft MSL)	820.2	804.1	816.6	816.1	694.3	815.2
Bottom of Well Point-Depth (ft)	15.8	33.8	19.5	22.7	144.5	18.9
-Elevation (ft MSL)	809.7	793.6	806.1	805.6	683.8	804.7
Map Coordinates:						
North	556.0457	534.0520	893.9	286.3	282.4	406.7
East	1869.4696	2084.2925	2150.4	1898.5	1889.7	718.1
Completion Date	2-25-88	2-26-88	7-28-88	7-26-88	8-8-88	7-28-88

## NOTES:

=====

T.O.I.C. - Top of Inner Well Casing  
 ID - Inside Diameter  
 SS - Stainless Steel  
 MSL - Mean Sea Level

Wayne Reclamation & Recycling RI/FS Site  
Columbia City, Indiana

	P1	P2	P3	P4
Ground Surface Elevation (ft MSL)	836.1	826.9	825.3	824.6
Total Depth of Boring (ft)	28.0	18.0	20.0	15.0
T.O.I.C. Elevation (ft MSL)	838.64	829.91	827.98	827.13
Well Materials	2"ID PVC	2"ID PVC	2"ID PVC	2"ID PVC
Screen Material	2"ID PVC	2"ID PVC	2"ID PVC	2"ID PVC
Screen Length (ft)	10.0	10.0	10.0	10.0
Slot Size (in)	0.010	0.010	0.010	0.010
Geologic Formation	Upper	Upper	Upper	Upper
Top of Seal-Depth (ft)	14.0	4.0	2.0	2.0
-Elevation (ft MSL)	822.1	822.9	823.3	822.6
Top of Sand Pack-Depth (ft)	15.0	5.0	3.0	3.0
-Elevation (ft MSL)	821.1	821.9	822.3	821.6
Top of Screen-Depth (ft)	16.5	6.9	4.5	4.0
-Elevation (ft MSL)	819.6	820.0	820.8	820.6
Bottom of Well Point-Depth (ft)	27.0	17.4	15.0	14.5
-Elevation (ft MSL)	809.1	809.5	810.3	810.1
Map Coordinates: North	761.2	576.6	398.2	504.0
East	1573.4	1670.4	1567.2	1463.7
Completion Date	7-28-88	7-28-88	7-28-88	7-29-88

## NOTES:

=====

T.O.I.C. - Top of Inner Well Casing  
 ID - Inside Diameter  
 SS - Stainless Steel  
 MSL - Mean Sea Level

C-1

PHASE I AND II MONITORING WELLS AND WELL DETAILS



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. **P1**  
 Surface Elevation 836.1  
 Job No. 60128  
 Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
						Loose Brown SILT Topsoil (OL).					
						Medium Dense Red Brown Fine Sandy SILT (ML/SM).					
1		18	M	15	5						
						Color change to Brown, Little Fine to Coarse Gravel.					
2		18	M	23	10						
3		18	M	12	15	Very Stiff Gray Lean CLAY, Trace Fine to Coarse Sand (CL).					
4		18	W	13	20	4 inch Gray Fine Sand Seam at 19.5 feet.					
5			W	12	25	Medium Dense Gray Fine to Medium SAND, Trace to Little Silt (SP).					
					30	End of Boring at 28.0 Feet.					
						Installed Well P1 at 27.0 feet.					
					35						
					40						

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES

While Drilling  $\nabla$  20.0 Upon Completion of Drilling 20.7  
 Time After Drilling 0.25 hr. 7/29/88  
 Depth to Water 20.7' 20.65'  
 Depth to Cave in

Start 7/28/88 End 7/28/88  
 Driller DC Chief Rig CME  
 Logger TJM Editor TJM2 750  
 Drill Method 4.25" ID HSA 0-28'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **P2**

Surface Elevation 826.9

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	W	Depth		qu (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
					Loose Brown Sandy SILT Topsoil (ML/SM).					
1	12	M	16	5	Medium Dense Brown Sandy SILT, Trace to Little Fine to Coarse Gravel (ML/SM).					
2	16	M	34	10	Medium Dense Gray Fine to Medium SAND, Trace Silt (SP).					
3	18	W	26	15	Fine to Coarse SAND, Silt Decreases to None.					
4	18	W	28	20						
				25	End of Boring at 18.0 Feet.  Installed Well P2 at 17.4 feet.					
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS**

While Drilling  $\nabla$  11.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling 0.25 hr. 7/29/88 \_\_\_\_\_  
Depth to Water 11.5' 11.5' \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

**GENERAL NOTES**

Start 7/28/88 End 7/28/88  
Driller DC Chief Rig CME  
Logger TJM Editor TJM2 750  
Drill Method 4.25" ID HSA 0-18'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **P3**  
Surface Elevation **825.3**  
Job No. **60128**  
Sheet **1** of **1**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					Loose Brown and Gray Mottled Sandy SILT (ML/SM).					
1		M	10	5						
2	15	M	17	10	Hard Gray Lean CLAY, Trace Coarse Sand (CL).					
3	16	W	11	15						
					Medium Dense Gray Fine to Coarse SAND (SP).					
4	12	W	17	20						
					End of Boring at 20.0 Feet.					
					Installed Well P3 at 15.0 Feet.					
				25						
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS**While Drilling  $\nabla$  15.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling 0.25 hr. 7/29/88 \_\_\_\_\_  
Depth to Water 10' 9.9' \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.**GENERAL NOTES**Start 7/28/88 End 7/28/88  
Driller DC Chief RigCME  
Logger TJM Editor TJM2 750  
Drill Method 4.25" ID HSA 0-20'

# LOG OF TEST BORING

## Project Wayne Reclamation & Recycling

**Location** Columbia City, Indiana

Boring No. **P4**  
Surface Elevation **824.6**  
Job No. **60128**  
Sheet **1** of **1**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE						VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES				
No.	Type	Rec. (in.)	Moist	N	Depth			$q_u$ (qa) (tsf)	H <sub>Nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
							Loose Brown Sandy SILT Topsoil (ML/SM).					
1		8	M	8	5		Stiff Brown SILT, Little to Some Clay, Trace Fine Sand (ML/CL).					
2			W	22	10		Medium Dense Gray Fine to Coarse SAND, Little to Some Silt (SP).					
3			W	54	15							
					20		End of Boring at 15.0 Feet.  Installed Well P4 at 14.5 Feet.					
					25							
					30							
					35							
					40							

## WATER LEVEL OBSERVATIONS

While Drilling 9.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling 0.25 hr. 7/29/88 \_\_\_\_\_  
 Depth to Water 9' 9.1' \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/29/88 End 7/29/88  
Driller DC Chief Rig CME  
Logger TJM Editor TJM2 750  
Drill Method 4.25" ID HSA 0-15'

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB018

Surface Elevation 839.9

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1	16	M	20		FILL: Black Organic CLAY, Topsoil (OL).		0.0			
2	16	M	10				0.0			
3	14	M	19		FILL: Black to Dark Brown Silty Fine to Coarse SAND, Trace Fine to Coarse Gravel with Glass, Metal and Slag (SM).		0.5			
4	18	M	11		Brown Fine Sandy SILT (ML/SM).		0.5			
5	14	M	12		Brown Fine SAND (SP).		2.0			
				10						
					Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
6	18	M	22							
				15						
					Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).					
7	18	M	20				0.0			
				20						
8	18	M	20				0.0			
				25						
					Gray Fine to Medium SAND (SP).					
9	16	W	67				0.0			
				30						
				35						
				40	End of Boring at 35.0 Feet.  Installed Well MW-1S at 34.8 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  30.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 2/27/88 End 2/27/88  
 Driller \_\_\_\_\_ Chief CB Rig D50B  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method 4 1/4" HSA 0-35'

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-11**Surface Elevation **839.5**Job No. **60128**Sheet **1** of **2**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	MMU	Explo- sive Gas	Field VOC Water	Mono- tox
					For Lithologic Details to 33.5 Feet see Phase I Boring Log SB018 (MW-1S)					
1		8	W	41	Dense Gray-Brown Medium to Coarse SAND, Trace Silt (SP).					
2		18	W	44	Color Change to Gray, Fine to Medium Sand, Trace to Little Silt.					

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling **8-24-88** \_\_\_\_\_  
Depth to Water **26.40** \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 7/26/88 End 7/27/88  
Driller DC Chief Rig CME  
Logger TJM Editor TJM 750  
Drill Method 5-7/8" RWB 0 -85'

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-11**Surface Elevation **839.5**Job No. **60128**Sheet **2** of **2**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
3		0	W	37						
4			W		Dense Coarse SAND and Fine GRAVEL (SP).					
5		0	M	53	Hard Gray Lean CLAY, Some Silt and Little Fine to Coarse Sand (CL).					
6		18	M	36		(>4.5)				
7		12	M	50	Hardness Decreasing to Stiff, Some Fine to Coarse Sand	(2.0)				
8		8	M	25		(1.5)				
9		12	W	129	Very Dense Gray Very Fine SAND, Some Silt, Trace Clay (SP)					
10		15	W	61	Fine to Coarse Sand, Trace to Little Silt, Trace Fine Gravel, Clay Decreasing to None					
11			W	93	End of Boring at 85.0 Feet. Installed Well MW-11 at 84.0 Feet.					

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-1D**Surface Elevation **839.3**Job No. **60128**Sheet **1** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					FILL: Black Organic Clay, Topsoil (OL).					
					FILL: Black to Dark Brown Silty Fine to Coarse SAND, Trace Fine to Coarse Gravel and Glass, Metal and Slag.					
				5						
					Brown Fine Sandy SILT (ML/SM).					
					Brown Fine SAND (SP).					
				10						
					Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).					
				15						
					Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).					
				20						
				25						
					Gray Fine to Medium SAND (SP).					
				30						
				35						
				40						

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Upon Completion of Drilling 19.27'  
 Time After Drilling 8/12/88  
 Depth to Water 24.38'(TOIC)  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 8/9/88 End 8/11/88  
 Driller DC Chief RigCME  
 Logger DSP Editor TJM 750  
 Drill Method 4-7/8" RWB 0-55' 3-7/8" 55-150'

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-1D**Surface Elevation **839.3**Job No. **60128**Sheet **2** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qs) (tsf)	Hnu	Explosive Gas	Field VOC Water	Mono- tox
					Trace to Little Silt at 40.0 Feet.					
				45						
				50	Dense Coarse SAND and Small GRAVEL (SP/SW).					
				55	Hard Gray Lean CLAY, Some Silt and Little Fine to Coarse Sand (CL).					
				60						
				65						
				70						
				75	Very Dense Gray Very Fine SAND, Some Silt and Trace Clay (SP).					
				80						
				85						

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-1D**Surface Elevation **839.3**Job No. **60128**Sheet **3** of **4**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
1		13	W	70	90	Dense to Very Dense Gray Fine Silty SAND (SM).				
2		13	W	64	95					
3		12	W	57	100					
4		12	W	124	105	Layered, Occasional Coarse Sand at 103.5 Feet.				
5		11	W	67	110	Occasional Pebbles at 108.5 Feet.				
6		12	W	65	115	Pebbles Gone at 113.5 Feet.				
7		12	W	92	120					
8		12	W	100	125	Coarse Sand Gone at 123.5 Feet.				
9		12	W	82	130	Very Dense at 128.5 Feet.				

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-1D**Surface Elevation **839.3**Job No. **60128**Sheet **4** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
10		12	W	93	135	Some Medium and Coarse Sand and Pebbles at 133.5 Feet.					
11		11	M	68/6"	140	Hard Gray Fine Sandy CLAY/Sandy SILT, Trace Coarse Sand and Pebbles. Pieces of Sandstone in tip of spoon (SM/SC).	(>4.5)				
12		11	W	>100	150	Very Dense Gray-Brown Fine Silty SAND, Trace Coarse Sand and Pebbles (SM).					
					155	End of Boring at 150.0 Feet. Installed MW-1D at 148.5 Feet.					
					160						
					165						
					170						
					175						

MW-2S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB016

Surface Elevation 827.0

Job No. 60128

Sheet 1 of 1

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## SAMPLE

VISUAL CLASSIFICATION  
and Remarks

## SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HMU	Explosive Gas	Field VOC Water	Mono- tox
1		15	M	23		Brown Fine Sandy SILT (ML/SM).		0.0			
2		16	M	14				1.0			
3		18	M	29	5			0.0			
4		12	M	24		Brown Fine to Coarse SAND, Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
5		18	M	35	10	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
6		18	W	28	15			0.0			
7		16	W	42	20			0.0			
					25	End of Boring at 23.0 Feet. Installed Well MW-2S at 20.1 Feet.					
					30						
					35						
					40						

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES

While Drilling  $\nabla$  11.5 Upon Completion of Drilling \_\_\_\_\_

Time After Drilling \_\_\_\_\_

Depth to Water \_\_\_\_\_

Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Start 2/26/88 End 2/26/88

Driller \_\_\_\_\_ Chief KM Rig CME

Logger \_\_\_\_\_ Editor 55

Drill Method 4 1/4" HSA 0-23'

MW-3S

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **SB022**  
 Surface Elevation **825.8**  
 Job No. **60128**  
 Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
1		16	M	21	Brown Fine Sandy SILT (ML/SM).		0.0			
2		16	M	9	Gray SILT, Some Clay (ML-CL).		0.0			
3		18	M	15	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).		0.0			
4		16	M	19			0.0			
5		16	M	39	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Small to Large Gravel (ML-CL).		0.0			
					Gray-Brown Fine to Coarse SAND, Some Small to Large Gravel (SW/SP).		0.0			
6		14	W	4			0.0			
					Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
7		16	M	21			0.0			
					End of Boring at 20.0 Feet.					
					Installed Well MW-3S at 17.8 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  12.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.

## GENERAL NOTES

Start 2/28/88 End 2/28/88  
 Driller \_\_\_\_\_ Chief CB Rig D50B  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method 4 1/4" HSA 0-20'

MW-4S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB019

Surface Elevation 840.5

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo sive Gas	Field VOC Water	Mono- tox
1	16	M	7		FILL: Brown Fine Sandy SILT (ML/SM) with Wood, Metal, Wire and Plastic.		0.0			
2	16	M	17				0.0			
3	8	W	16	5			0.0			
4	12	M	7		FILL: Dark Gray to Black Silty CLAY (ML-CL).		0.0			
5	8	M	12		Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
				10						
6	18	M	28		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
				15						
7	18	M	43				0.0			
				20						
8	18	M	34		Gray Fine to Medium SAND (SP).		0.0			
				25						
9	18	W	20				0.0			
				30						
10	18	W	60				0.0			
				35						
				40	End of Boring at 37.0 Feet. Installed Well MW-4S at 34.1 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling  $\nabla$  7.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

## GENERAL NOTES

Start 2/24/88 End 2/24/88  
 Driller \_\_\_\_\_ Chief CB Rig D50B  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method 4 1/4" HSA 0-37'

Location ..... Columbia City, Indiana

Sheet 1 of 1

VISUAL CLASSIFICATION					and Remarks					qu (qa) (tsf)	MNu	Explo- sive Gas	Field VOC Water	Hemo- tox					
No.	7 D E	Rec (in.)	Moist	N	Depth														
1		12	W			Dark Brown Organic CLAY Topsoil (OL).						0.0							
2		12	M																
3		15	M	35	5						Gray Fine to Medium SAND (SP).						0.1		
4		12	M	6															
5		14	M		10														
6		16	M	35	15	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).						0.0							
						Gray SILT, Some Clay (ML-CL).													
7		18	W	11	20	Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).						0.0							
8		18	W	17	25	End of Boring at 25.0 Feet.  Installed Well MW-5S at 25.0 Feet.						0.0							
					30														
					35														
					40														

Start 2/23/88 End 2/23/88  
Driller Chief KM Rig CME  
Logger Editor 55  
Drill Method 4 1/4" HSA 0-25'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

MW-6S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

 Boring No. **SB020**  
 Surface Elevation **838.8**  
 Job No. **60128**  
 Sheet **1** of **1**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
1	14	M	80		FILL: Black Fine to Coarse Sand and Gravel.		0.0			
2	18	M	28		Brown Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
3	18	M	29	5			0.0			
4	18	M	20				0.0			
5	18	M	23				0.0			
				10			0.0			
6	18	M	27		Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
				15			0.0			
7	18	M	34		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
				20			0.0			
8	18	M	29		Gray Fine to Medium SAND (SP).		0.0			
				25			0.0			
				30			0.0			
9	18	W	12		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP). Installed Well MW-6S at 39.1 Feet. End of Boring at 40.0 Feet.		0.0			
				35			0.0			
				40			0.0			
10	18	W	18				0.0			
							0.0			
11	18	W	22				0.0			

## WATER LEVEL OBSERVATIONS

 While Drilling  $\nabla$  28.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

 Start 2/25/88 End 2/25/88  
 Driller \_\_\_\_\_ Chief CB Rig D50B  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_  
 Drill Method 4 1/4" HSA 0-40'

WAF

WARZYN

## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SE

Surface Elevation

Job No. 601

Sheet 1 of

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SA P

## SAMPLE

VISUAL CLASSIFICATION  
and Remarks

## SOIL PROPERTIES

No.	Rec (in.)
1	16
2	16
3	16
4	12
5	14
6	
7	18

No.	Rec (in.)	Moist	N	Depth
1	12	M	14	
2	15	M	7	
3	18	W	8	
4	16	M	14	
5	15	M	68	
6	18	M	40	
7	18	M	70	
8	18	W	27	
9	14	W	106	

Black Organic SILT, Topsoil (OL).

Brown Fine Sandy SILT (ML/SM).

Brown Silty CLAY, Little Fine to Coarse  
Sand, Trace Small to Coarse Gravel  
(ML-CL).Gray Silty CLAY, Little Fine to Coarse  
Sand, Trace Fine to Coarse Gravel  
(ML-CL).

Gray Fine to Medium SAND (SP).

End of Boring at 31.0 Feet.

Installed Well MW-7S at 30.4 Feet.

QU (qa) (tsf)	HNU	EXP SI G
---------------------	-----	----------------

0.0

0.0

0.0

0.0

(4.5) 0.0

(3.5) 0.0

(3.5) 0.0

0.0

0.1

## WATER LEVEL OBSERVATIONS

## GENERAL

 While Drill  
Time After  
Depth to  
Depth to

 The strat  
types and

 While Drilling  $\nabla$  23.0 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

 The stratification lines represent the approximate boundary between soil  
types and the transition may be gradual.

 Start 2/24/88 End \_\_\_\_\_  
 Driller \_\_\_\_\_ Chief \_\_\_\_\_  
 Logger TJM Editor \_\_\_\_\_  
 Drill Method 4 1/4" H

**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-8D**Surface Elevation **836.3**Job No. **60128**Sheet **1** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qs) (tsf)	HMU	Explosive Gas	Field VOC Water	Mono- tox
					Black Organic SILT, Topsoil (OL).					
					Brown Fine Sandy SILT (ML/SM).					
				5						
					Orange Brown Fine SAND (SP).					
				10						
					Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).					
				15						
				20						
				25						
				30	Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).					
1		10	W	23	Medium Dense Brown Fine SAND, Little Silt (SP).					
				35						
2		0	W	36						
				40						

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling **8-24-88** \_\_\_\_\_  
Depth to Water **22.91** \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start **8/12/88** End **8/16/88**  
Driller **DC/CB** Chief **RigCME**  
Logger **DSP/TJM** Editor **TJM** **750**  
Drill Method **5-7/8" RWB 0 -50' 4-7/8"**  
**50-150'**

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-8D**Surface Elevation **836.3**Job No. **60128**Sheet **2** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	fnu	Explo- sive Gas	Field VOC Water	Mono- tox
					Gray Fine to Coarse SAND and Pebbles, Trace Silt (SW).					
3	13	M/W	61	45	Hard Gray Silty CLAY, Trace Pebbles (ML/CL).	(>4.5)				
4	7	M	21	50	Hard Gray Fine Sandy SILT, Trace Medium and Coarse Sand and Pebbles (ML/SM).	(3.5/>4.5)				
5	14	M	15	55	Medium Soft at 54.0 feet.	(0.75/1.0)				
6	13	M	23	60	Very Stiff to Hard at 59.0 feet.	(2.5/4/5)				
7	13	M/W	61	65	Dense to Very Dense Gray Fine to Medium SAND, Little to Some Silt (SP).	(2.5/4.5)				
8	13	W	110	70	Very Dense Gray Fine Silty SAND (SM).					
9	11	W	59	75	Trace Coarse Sand and Pebbles at 74.0 feet.					
10	12	W	78	80	Decreasing Sand and Pebbles to None at 79.0 feet.					
11	12	W	87	85	Very Fine Sand at 84.0 feet.					

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-8D**Surface Elevation **836.3**Job No. **60128**Sheet **3** of **4**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explosive Gas	Field VOC Water	Mono- tox
12		12	W	95	90					
					95					
13		10	W	107	100	Very Dense Gray Fine to Coarse SAND and Pebbles, Some Silt (SW).				
					105					
14		11	W	100	110					
					115	Dense Gray Silty SAND, Trace to Some Fine and Coarse Gravel (ML/SM).	0.0			
15		10	W	70	120	Increasing Gravel at 118.5 feet.	0.0			
16		4	W	15	125					
					130	Increased Gravel, Trace to Little Silty Clay, Trace Shale and Large Gravel at	0.0			
17		14	W	129						

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-8D**Surface Elevation **836.3**Job No. **60128**Sheet **4** of **4**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hnu	Explosive Gas	Field VOC Water	Mono- tox
						129.0 feet.					
						Brown to Greenish Brown Fine SAND, Trace Silt (SP).					
					135						
18		8	W	0/6"	140			0.0			
					145						
19		8	W	8/9"	150			0.0			
					155	End of Boring at 150.0 feet.					
					160	Installed Well MW-8D at 148.5 Feet.					
					165						
					170						
					175						

MW-9S

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB007

Surface Elevation 827.1

Job No. 60128

Sheet 1 of 1

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	M	Depth		qu (qa) (tsf)	H <sub>nu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1	18	M	22		FILL: Black Silty TOPSOIL (OL).					
2	10	M	5		FILL: Black & Brown Silty Fine to Medium SAND, Little Fine to Coarse Gravel (SM).		0.0			
3	15	M	6		Brown Fine Sandy SILT (ML/SM).		0.0			
4	12	M	15		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
5	18	M	51		Gray SILT, Some Clay (ML-CL).		0.0			
6	18	W	21		Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		0.0			
7	12	W	26				0.0			
					End of Boring at 20.0 Feet.					
					Installed Well MW-9S at 18.0 Feet.					

## WATER LEVEL OBSERVATIONS

While Drilling 10.3 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil  
 types and the transition may be gradual.

## GENERAL NOTES

Start 2/28/88 End 2/28/88  
 Driller \_\_\_\_\_ Chief KM Rig CME  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
 Drill Method 4 1/4" HSA 0-20'

WARZYN



## LOG OF TEST BORING

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. SB021

Surface Elevation 825.5

Job No. 60128

Sheet 1 of 1

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## SAMPLE

VISUAL CLASSIFICATION  
and Remarks

## SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	H <sub>mu</sub>	Explo- sive Gas	Field VOC Water	Mono- tox
1		12	M	23		Dark Brown Organic SILT. Topsoil (OL). Brown Fine Sandy SILT (ML/SM).		0.0			
2		6	M	12				0.0			
3		18	M	35	5	Gray-Brown Fine to Coarse SAND, Some Fine to Coarse Gravel (SW/SP).		20.0			
4		18	M	50				40.0			
5		18	W	67	10			20.0			
6		14	W	36	15			0.0			
					20	End of Boring at 16 Feet.					
					25	Installed Well MW-10S at 15.8 Feet.					
					30						
					35						
					40						

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES





While Drilling  $\nabla$  8.5 Upon Completion of Drilling \_\_\_\_\_  
 Time After Drilling \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Depth to Cave in \_\_\_\_\_

Start 2/25/88 End 2/25/88  
 Driller \_\_\_\_\_ Chief KM Rig CME  
 Logger \_\_\_\_\_ Editor \_\_\_\_\_ 55  
 Drill Method 4 1/4" HSA 0-16'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-11S**Surface Elevation **827.4**Job No. **60128**Sheet **1** of **1**

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL (312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	HNu	Expto- sive Gas	Field VOC Water	Mono- tox
1		16	M	9	 Black Organic CLAY, Topsoil (OL) Brown Fine Sandy SILT (ML/SM).		0.0			
2		16	M	9			0.0			
3		16	M	3	 Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Little Silt (SP-SM).  Gray Silty CLAY, Little Fine to Coarse Sand, Trace Fine to Coarse Gravel (ML-CL).		0.0			
4		14	M	16			0.0			
5		16	M	15			0.0			
6		16	M	19			0.0			
7		14	M	16	 Gray Fine to Medium SAND (SP).		0.0			
8		12	W	30			0.0			
					End of Boring at 34.0 Feet. Installed Well MW-11S at 33.7 Feet.					

**WATER LEVEL OBSERVATIONS**

While Drilling  $\nabla$  23.5 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling 8-3-88 \_\_\_\_\_  
Depth to Water 14.66' \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start 2/26/88 End 2/26/88  
Driller \_\_\_\_\_ Chief CB Rig D50B  
Logger TJM Editor DSP  
Drill Method 4 1/4" HSA 0-34'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.





**WARZYN****LOG OF TEST BORING**

Project Wayne Reclamation &amp; Recycling

Location Columbia City, Indiana

Boring No. **MW-13D**Surface Elevation **828.3**Job No. **60128**Sheet **1** of **4**

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SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N			Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
							Brown Fine to Coarse SAND. Trace of Silt and Fine to Medium Gravel. For Lithologic Details to 28.5 Feet See Boring Log MW-13S.					
					5		Increased Amount of Silt and Density at 5.0-7.5 Feet.					
					10		Dense Gray Silty CLAY, Trace of Fine Gravel.					
					15		Brown to Gray Fine to Medium SAND, Trace of Silt.					
					20							
					25							
1		7	M	10	30		Medium Soft to Stiff Gray CLAY, Trace Coarse Sand (CL).	(1.0/1.25)	0.0			
2		6	M	50/3"	35		Dense to Very Dense Gray Fine Sandy SILT, Trace Medium to Coarse Sand (ML/SM).		0.0			
3		16	M	102	40		Hard Gray Lean CLAY, Trace Fine to Coarse Sand (CL).	(>4.5)	0.0			

**WATER LEVEL OBSERVATIONS**

While Drilling ☒ Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling **8-24-88** \_\_\_\_\_  
Depth to Water **14.68** \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**GENERAL NOTES**

Start **7/30/88** End **8/8/88**  
Driller **DC/JK** Chief **RigCME**  
Logger **TJM** Editor **DSP** **750**  
Drill Method **5-7/8" RWB 0 -50' 4-7/8" 50-145'**

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-13D**Surface Elevation **828.3**Job No. **60128**Sheet **2** of **4**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hru	Explo- sive Gas	Field VOC Water	Mono- tox
4	18	M	49	45	Increasing Silt, Trace to Little Fine to Coarse Sand.	(>4.5)	0.0			
5		M		50						
6	18	M	22	55		(>4.5)				
7	18	M	34	60						
8	0	M	53	65	Very Dense Gray Fine SAND, Some Silt (SP).					
9	2	W	46	70						
10	18	W	108	75						
11	12	W	59	80						
12	12	W	75	85	Interbedded Seams with Varying Proportions of Fine Sands and Silts at 75.0 Feet.					

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-13D**Surface Elevation **828.3**Job No. **60128**Sheet **3** of **4**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qs) (tsf)	Hnu	Explosive Gas	Field VOC Water	Hono- tox
13		12	W	96	90						
14		12	W	95	95						
15			W		100						
16		12	W	71	105						
17		12	W	37	110						
18		12	W	107	115						
19		12	W	81	120	Very Stiff Gray SILT, Trace to Little Clay (ML).	(3.0)				
20		12	W	139	125	Very Dense Gray Fine to Coarse SAND, Little Fine Gravel, Trace Silt (SP).					
21		12	W	0/8"	130						

**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-13D**Surface Elevation **828.3**Job No. **60128**Sheet **4** of **4**

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SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
22	0	W	SR	135						
23	0	W	SR	140						
				145						
				150	End of Boring at 145.0 Feet.  Installed Well MW-13D at 144.5 Feet.					
				155						
				160						
				165						
				170						
				175						



**WARZYN****LOG OF TEST BORING**Project **Wayne Reclamation & Recycling**Location **Columbia City, Indiana**Boring No. **MW-14S**Surface Elevation **823.6**Job No. **60128**Sheet **1** of **1**

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**SAMPLE****VISUAL CLASSIFICATION  
and Remarks****SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	HNU	Explo- sive Gas	Field VOC Water	Mono- tox
					5	For Lithologic Details to 18.9 Feet See Boring Log SB040.				
					10					
					15					
					20					
					25	End of Boring at 18.9 Feet.  Installed Well MW-14S at 18.9 Feet.				
					30					
					35					
					40					

**WATER LEVEL OBSERVATIONS****GENERAL NOTES**

While Drilling ☒ NM Upon Completion of Drilling 11.6'  
Time After Drilling 8-3-88  
Depth to Water 10.24'  
Depth to Cave in \_\_\_\_\_

Start 7/28/88 End 7/28/88  
Driller KT Chief Rig CME  
Logger DSP Editor TJM 55  
Drill Method 4.25" ID HSA 0-18.9'

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

C-2

MONITORING WELLS LOGS FROM PREVIOUS INVESTIGATIONS

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. PH

Surface Elevation 830.0

Job No. 60128

Sheet 1 of 4

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

## SAMPLE

## VISUAL CLASSIFICATION and Remarks

## SOIL PROPERTIES

No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					CLAY					
				5						
				10						
				15						
				20	SAND					
				25						
				30	HARDPAN					
				35						
				40						

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES

While Drilling 22.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling 8-3-88 \_\_\_\_\_  
Depth to Water 15.71 \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start \_\_\_\_\_ End 2/24/60  
Driller Bojial Chief \_\_\_\_\_ Rig Cable \_\_\_\_\_  
Logger \_\_\_\_\_ Editor \_\_\_\_\_ Tool \_\_\_\_\_  
Drill Method Cable Tool

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**

# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. PH

Surface Elevation 830.0

Job No. 60128

Sheet 2 of 4

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

## SAMPLE

## VISUAL CLASSIFICATION and Remarks

## SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
					45					
					50					
					55					
					60					
					65					
					70					
					75					
					80					
					85					

SAND

HARDPAN

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. PH

Surface Elevation 830.0

Job No. 60128

Sheet 3 of 4

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

## SAMPLE

## VISUAL CLASSIFICATION and Remarks

## SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	M	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Moni- tox
					90					
					95					
					100					
					105					
					110					
					115					
					120					
					125					
					130					

SAND

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



## LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. PH

Surface Elevation 830.0

Job No. 60128

Sheet 4 of 4

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### SAMPLE

### VISUAL CLASSIFICATION and Remarks

### SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
					135					
					140					
					145					
					150					
					155					
					160					
					165					
					170					
					175					

Installed Packing House (PH) Well  
for Daniel Bros.  
Completed Depth of Well: 153 Feet  
Dia. of Screen: 8 Inch  
Length: 16 Ft.

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**

# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. #8

Surface Elevation 837.0

Job No. 60128

Sheet 1 of 5

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## SAMPLE

## VISUAL CLASSIFICATION and Remarks

## SOIL PROPERTIES

No.	TYPE	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	HNu	Explo- sive Gas	Field VOC Water	Mono- tox
					5					
					10					
					15					
					20					
					25					
					30					
					35					
					40					

## WATER LEVEL OBSERVATIONS

## GENERAL NOTES

While Drilling 28.0 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

Start \_\_\_\_\_ End 11/8/74  
Driller GH Chief \_\_\_\_\_ Rig Rotary  
Logger \_\_\_\_\_ Editor \_\_\_\_\_  
Drill Method \_\_\_\_\_

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

No.	Type	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
					45						
					50						
					55						
					60						
					65						
					70						
					72	CLAY					
					75	Fine Silty SAND with Clay.					
					80						
					85						

NOTE: Boring log actually prepared by company listed in the title block.  
 Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. #8

Surface Elevation 837.0

Job No. 60128

Sheet 3 of 5

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

## SAMPLE

## VISUAL CLASSIFICATION and Remarks

## SOIL PROPERTIES

No.	Rec (in.)	Moist	N	Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
				90					
				95					
				100					
				105					
				110					
				115					
				120					
				125					
				130					

NOTE: Boring log actually prepared by company listed in the title block.  
 Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



**LOG OF TEST BORING**

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. #8

Surface Elevation 837.0

Job No. 60128

Sheet 4 of 5

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**SAMPLE**

**VISUAL CLASSIFICATION  
and Remarks**

**SOIL PROPERTIES**

No.	TYPE	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
					135						
					140						
					145						
					150						
					155						
					160						
					165	Fine to Medium SAND with Gravel.					
					170						
					175						

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**



## LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. #8

Surface Elevation 837.0

Job No. 60128

Sheet 5 of 5

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth	qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water
					180					
					185					
					190					
					195					
					200					
					205					
					210					
					215					
					220					

SAND, Gravel, and Boulders.

Fractured Blue SHALE.

Install City Well #8 to 210 Feet  
40 Ft. Screen Set from 170 to 210 Feet.

Sheet 1 of 2

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**

# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. MW-83B

Surface Elevation 843.0

Job No. 60128

Sheet 2 of 2

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	Hnu	Explo- sive Gas	Field VOC Water	Mono- tox
				45	Gray Fine to Medium SAND, Little Gravel, Clay Traces.					
				50						
					Gray CLAY.					
					Gray SILT.					
				55	Gray Coarse to Medium GRAVEL and SAND.					
					Gray SILT.					
				60	Gray Coarse to Medium GRAVEL and SAND with Silty Fine Sand and Boulders.					
					Gray SILT with Fine Sand.					
				65	Gray SILT and Sand with Gravel.					
					Gray SILT and Sand.					
				70	End of Boring at 68.0 Feet. Installed Well 83B at 65.0 Feet.					
				75						
				80						
				85						

NOTE: Boring log actually prepared by company listed in the title block.  
Boring log redrafted by Warzyn due to poor quality original.

**WARZYN**

# LOG OF TEST BORING

Project Wayne Reclamation & Recycling

Location Columbia City, Indiana

Boring No. MW-83D

Surface Elevation 824.2

Job No. 60128

Sheet 1 of 2

ONE PIERCE PLACE • SUITE 1110, ITASCA, ILL. 60143 • TEL(312) 773-8484

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	HMU	Explo- sive Gas	Field VOC Water	Mono- tox
					Topsoil and Clay.					
				5	Fine Brown SAND with Silt and Clay.					
				10	Hard Silty Gray CLAY with Gravel.					
				15						
				20						
				25	Gray Coarse SAND and GRAVEL.					
				30	Gray Fine to Medium SAND and GRAVEL.					
				35	Gray Fine to Coarse SAND and GRAVEL with Clay Balls.					
					Gray Fine to Very Coarse GRAVEL and SAND with Clay Balls and Some Stones.					
				40	Gray Silty Fine SAND with Clay and Gravel.					

## WATER LEVEL OBSERVATIONS

While Drilling 11.7 Upon Completion of Drilling \_\_\_\_\_  
Time After Drilling \_\_\_\_\_  
Depth to Water \_\_\_\_\_  
Depth to Cave in \_\_\_\_\_

## GENERAL NOTES

Start \_\_\_\_\_ End 5/25/83  
Driller JB Chief \_\_\_\_\_ Rig Cable \_\_\_\_\_  
Logger JA Editor \_\_\_\_\_ Tool \_\_\_\_\_  
Drill Method Cable Tool

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

No.	TYPE	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	qu	Hnu	Explo	Field	Mono
							(qa) (tsf)		sive Gas	VOC Water	
						Gray Fine to Medium SAND with Clay Balls and Gravel.					
					45	Gray CLAY and Silty Gravel with Sand.					
						Gray Fine to Medium SAND with Clay.					
					50	Gray CLAY with Silt and Gravel.					
						Gray Medium GRAVEL and SAND, Some Clay.					
					55	Gray CLAY with Silt, Gravel and Sand.					
						End of Boring at 56.5 Feet. Installed Well 83D at 54.0 Feet.					
					60						
					65						
					70						
					75						
					80						
					85						

## APPENDIX D

### LOGS FOR WATER SUPPLY WELLS IN VICINITY

Map #	Owner	Well #	Location	Approx. Distance from Site	Date Drilled	Screened Interval	Formation (a)	Use of Well	Drilling Technique	Well Dia.	Static WL	Comments
1	Col. City	6	5' S of VanBuran, 100' E of Rolling Hills Av.	1500 ft N-NE	8-12-37	75-235	Un	City	Cable Tool	10	28	Well presently not being pumped because of excessive silting.
2	Col. City	7	215' S. of Well 6	1200 ft N-NE	1-30-72	185-216	Un	City	Reverse Circ.	20	30	Well presently being pumped Aquifer Elev.= 624
3	Col. City	8	560' SW. of Well 7 165' W. of Blue River	900 ft N	2-14-75	154-194	Un	City	Rotary	16	30	Well presently being pumped Bedrock Elev.= 646
4	Col. City	75A	150' S. of VanBuran St. 450' E. of Well 6	1750 ft NE	4-9-75	none			Rotary		13	Test Hole
5	Col. City (Proposed Well)	74A 9	1125' S. of VanBuran St. 200' W. of Blue River	400 ft N	11-1-74	203-206	Un		Rotary	2	16	Test Well
6	Spears & Dehner		1 mile N. of Col. City NW. corner of Rt. 30 and 9	1.3 miles NW	6-27-62	146-155 (est.)	Un	Industry	Cable Tool	8	47	Well log note: Temporary well to be removed.
7	Daniel Bros.	PH	South of WRR Building	on site	2-24-60	138-153	Un	Industry	Cable Tool	8	22	PH well located on site.
8	Bill Hare		On old Rt. 30, at east end of Col. City limits	2200 ft S	9-11-65	106-110	Un	Home	Jet	2	60	Sampled during Phase II RI Aquifer Elev.= 740
9	Ralph Killian		Killian Auto used parts (Junk yard)	1600 ft S	5-9-62	98-100	Un	Home	Rotary	2	47	Approx 2000' S. of Site Aquifer Elev.= 770
10	Paul Zumbrum		1 mile E. of Col. City S. side of SR 205	3800 ft E-NE	7-24-64	57-60	Un	Home	Jet	2	38	
11	McCoys Real Estate		Gateway East	1 mile E-SE	10-13-72	55-58	Un	Home	Jet	2	13	
12	McCoys Real Estate		Gateway East	1 mile E-SE	8-1-72	unk.	Un	Home	Jet	2	30	
13	McCoys Real Estate		Gateway East	1 mile	7-18-72	65-68	Un	Home	Jet	2	15	

Map #	Owner	Well #	Location	Approx. Distance from Site	Date Drilled	Screened Interval	Formation (a)	Use of Well	Drilling Technique	Well Dia.	Static WL	Comments
				E-SE								
14	Coon Hunter Lodge		W. 0.25 mile of Rt. 30 on SR 205	2800 ft NE	10-1-80	77-80	Un	Home	Rotary	4	29	
15	Jerry Ramsey		Gateway East	1 mile E	3-11-82	121-124	Un	Home	Rotary	4.5	26	
16	Ralph Shatzer		Gateway East	1 mile E-SE	7-14-80	116-119	Un	Home	Rotary	4.5	15	
17	Royal Monarch Homes		Gateway East	1 mile E-SE	10-5-78	163-170	Un	Home	Rotary	4	6	
18	Ronny Hile		2 miles E. of Col. City on SR 100S	1 mile E-SE	8-20-74	77-79 (est.)	Un	Home	Jet	2	30	
19	Fort Wayne Foundary		1.5 miles E. on Rt. 30 Industrial Park	3000 ft NE	11-26-85	90-102	Un	Industry	Rotary	6	35	Well for Plant Aquifer Elev.= 748
20	Ralph Killian		Killian Auto used parts (Junk yard)	1700 ft S	10-11-79	unk.	Bedrock	Home	Rotary	4.5	38	
21	McCoys Real Estate		Gateway East	1 mile E-SE	10-16-72	56-59	Un	Home	Jet	2	26	
22	Clarence Knisley		1 mile E. of Col. City on Rt. 30	1 mile E-SE	6-21-60	unk.	Un	Home	Jet	4	20	
23	Col. City	15	Col. City	not found	unk.	unk.	unk.	City (gas)	unk.	6	7.77	Gas supply well.
24	Col. City		Col. City E. Well Between SR 205	4300 ft NE	10-22-51	unk.	unk.	City	unk.	unk.	unk.	Well log note: See city map
24	Louie Quinn		S. of Jct. SR 205 and Rt. 30, 1st house on E. side	3800 ft NE	8-10-76	182-185	Un	Home	Rotary	4	30	

Map #	Owner	Well #	Location	Approx. Distance from Site	Date Drilled	Screened Interval	Formation (a)	Use of Well	Drilling Technique	Well Dia.	Static WL	Comments
25	Ralph Morrolff		0.5 mile E. of Col. City on S. side of SR 205	4300 ft NE	7-17-59	195-198	Un	Home	Jet	2	unk.	
26	George Coverstone		E. of Killian Auto used parts, 1/4 mile on SR 100S	1750 ft S-SE	6-15-79	211-214	Un	Home	Rotary	4.5	48	
27	Lester Lahr		Gateway East	1 mile E-SE	4-23-82	164-167	Un	Home	Rotary	4.5	30	
28	Ralph Morrolff		SR 205 E. of Rt. 30 1st place on S. side road	4300 ft NE	6-27-63	207-210	Un	Home	Rotary	4	35	
29	Richard Killian		1st Hs on W. sd Rt. 30, E. pass Jct Rt 30 & SR 205	3200 ft E-NE	11-18-70	unk.	Bedrock	Home	Rotary	4	45	Bedrock Elev. = 630
30	Tom Tenney		2.5 miles E. on S. side of Rt. 30	1.5 miles SE	6-12-79	117-120	Un	Home	Rotary	4	70	
31	Harold Warnick		3 miles SE. of Col. City on Raber Rd. (Sherwood Forest)	1.75 miles SE	10-21-67	77-80	Un	Home	Jet	2	40	Aquifer Elev. = 748
32	Phil Hively		Sherwood Forest Additions	1.75 miles SE	5-29-80	102-105	Un	Home	Rotary	4	40	
33	Moose Lodge		Rt. 30 Industrial Park	0.5 mile SE	4-1-78	209-212	Un	Home	Rotary	4	25	
34	Mrs. John Enyeart		1st brick house, Lincolnway toward Col. City	0.5 mile SE	11-10-72	55-58	Un	Home	Jet	2	40	
35	Jack Pease RUJA Tooling Bldg.		0.5 mile E. of Col. City on old Rt. 30	3500 ft SE	4-20-73	59-62	Un	Industry	Jet	2	30	
36	Stanley Hurd		1st house E. of Ed River bridge on Raber Rd.	1.3 miles SE	10-8-62	128-130	Un	Home	Rotary	2	20	Bedrock Elev. = 685(?)
37	Dale Judd		1.5 mile E. of Col. City Just off Raber Rd.	1.3 miles SE	12-26-59	131-134	Un	Home	Rotary	2	15	Water bearing gravel rusty

Map #	Owner	Well #	Location	Approx. Distance from Site	Date Drilled	Screened Interval	Formation (a)	Use of Well	Drilling Technique	Well Dia.	Static WL	Comments
38	Clifford Gibson		1.5 mile E. of Col. City on N. side of old Rt. 30	3000 ft SE	4-14-64	55-58	Un	Home	Jet	2	36	Aquifer Elev. = 780
39	H. Jr. Studebaker		2 mile E. of Col. City Just off Raber Rd. (300E)	1 mile S-SE	6-9-62	unk.	Bedrock	Home	Cbl Tool & Rotary	4	50	Bedrock Elev. = 589
40	Rays Body Shop		E. of Col. City on old Rt. 30, N. side of Rd.	3000 ft SE	4-15-64	87-90	Un	Home	Jet	2	40	Aquifer Elev. = 760
41	Tom Sroufe		N. of Raber Rd. on Paige Rd.	1.4 mile SE	10-25-73	unk.	Bedrock	Home	Rotary	4	17	Bedrock Elev. = 585
42	Col. City		S. Well at S. Edge of town E. of Rt. 9	3250 ft S-SW	10-22-51	unk.	unk.	unk.	unk.	unk.	unk.	Well was drilled to 325'. Gravel is producing unit 1 of 4 being pumped by city.
43	Ronald Mossburg		1 mile S. of Col. City on Rt. 9	1.25 miles S	9-10-60	113-116	Un	Home	Rotary	2	55	
44	Terry Hollenbaugh		1.75 mile S. of Rt. 9 and 14 on W. side of Rd.	1 mile S	5-30-81	unk.	Bedrock	Home	Rotary	5	20	
45	U.A.W. Bldg.		S. on Rt. 9 to 50 E. Left 3rd place on left.	1 mile S	11-3-77	89-92	Un	Home	Rotary	4	25	
46	Shella Rindfusz		1 mile S. of Col. City on Rt. 9	1 mile S	1-5-78	118-121	Un	Home	Rotary	4	57	
47	Lowell Draley		1 mile S. of Col. City on Rt. 9	1 mile S	9-24-73	unk.	Bedrock	Home	Rotary	4	70	Depth to Bedrock = 290 ft.
48	Paul Burkett		S. of Col. City on Rt. 9 to 200S 2nd house on N. side.	1.3 miles S	10-28-74	107-110	Un	Home	Rotary	4	80	
49	Ralph Wood Jr.		0.25 mile E. of Col. City on Raber Rd.	2500 ft S	12-12-70	141-144	Un	Home	Rotary	4	52	
50	Bob Weir		S. of Col. City off Rt. 9	4000 ft	11-3-59	102-105	Un	Industry	Jet	2	50	

Map #	Owner	Well #	Location	Approx. Distance from Site	Date Drilled	Screened Interval	Formation (a)	Use of Well	Drilling Technique	Well Dia.	Static WL	Comments
			Columbia Freight Lines	S								
51	Jay Crawford		1st place S. of Columbia Frieght Lines on Rt. 9	1 mile S	10-11-68	unk.	Un	Home	unk.	2	60	Aquifer Elev. = 781
52	Columbia Twp School		1 mile S. of Col. City and 0.5 mile W.	1.5 mile S-SW	8-30-61	98-104	Un	Public	Jet	6	unk.	Aquifer Elev. = 797
53	Columbia Twp School		S. of Col. City on SR 205 Past cemetary to 1st S. Rd.	1.5 miles S-SW	9-20-61	98-104	Un	Public	Jet	6	44	Bedrock Elev. = 735
54	Ray Barnes		0.25 mile S. of Col. City on Rt. 9 (New Addition)	1 mile S	5-13-63	unk.	Un	Home	Jet	2	45	Aquifer Elev. = 750
55	Floyd Ferguson		1 mile S. of Col. City on Rt. 9 1st farm on W.	1 mile S	9-19-63	109-112	Un	Home	Jet	2	48	Aquifer Elev. = 740

(a) Un - well screened in Unconsolidated material

unk. - Information not available

Elev. in mean sea level

Date Started \_\_\_\_\_ Fin'ished 8/12/37

Col 101 102  
Perm. Well #6

Subdivision Name

Ft W of EL.

**Ground Elevation.**

LAYNE-NORTHERN

**Ft N of SL.**

**Depth to bedrock.**

8-12-37

**\_\_Ft E of WL.**

**Bedrock elevation**

**\_\_Ft S of NL.**

**Aquifer elevation** .

**Lot Number** \_\_\_\_\_

1

**From**

**FORMULATIONS (Color, type of material, hardness, etc.)**

 $T_2 \phi$

11/18/72

GRA WHY  
LWRS

T31N, R9E, Sec 11 NW, SE, NE 2



INDIANA DEPARTMENT OF NATURAL RESOURCES  
INCORPORATED

INDIANAPOLIS • MISHAWAKA • LANSING

5050N  
775E

TEST

PERMANENT

Job No. 10268

Well Log No. 7 City Columbia City

County Whitley

Owner City of Columbia City

Township Columbia

Section 2

Location

State Indiana

From Land Description 215' S. of Well #6

From Street or Road 230' S. of Corner of Washington & Rolling-Hills-Ave.

FORMATION FOUND - DESCRIBE FULLY	FEET			
	Sample Depth	Sample Depth	Sample Depth	Sample Depth
Surface top soil	0	1	1	
Brown Clay	1	14	13	
Gray Clay with gravel	14	28	14	
Gravel & Sand	28	31	3	31
Gravel and Clay	31	33	2	
Sand	33	39	6	
Hard Sandy Clay & Gravel	39	70	31	
Silty Sand & Gravel	70	83	13	
Silty Sand & Clay	83	143	60	
Gravel with clay	143	154	11	
Sand and gravel	154	170	16	30
Fine Sand	170	173	3	30
Sand & Gravel	173	200	27	30
Heavy gravel & boulders	200	217	17	30
Clay & Boulders	217			

\* 63' TOTAL

30" to 30"

Hole 20 "Dio Drilled by: Cable Tool Rotary Jetting  
Reverse Circ. X Sucker Auger

Rotary Hole Grouted: Neat Cement Drilling Mud Other

Casing 16 "OD From 12 "above ground to 186 feet below ground. Weight 42.5 Pounds per foot

Screen 16 " Set from 185 to 216 feet Make Johnson Type SS 100 Size .040

Pumping test 1500 GPM drawdown to 45 feet after 24 hours pumping

Date Completed 1-30-72 Driller Dick Harts

**(Well driller does not fill out)**

vienna Cir

#7

**Subdivision Name**

COUNTY N. Kelly TWP. 31N RGE. 9E NH & SE & NE SEC. 11

Topo Map Columbia City 72

Ft W of EL.

**Ground Elevation.**

841

Weyher

**Field Located** By \_\_\_\_\_ **Date** \_\_\_\_\_

Ft N of SL.

### Depth to bedrock

1-30-22

**Courthouse Location** By \_\_\_\_\_ **Date** \_\_\_\_\_

**Ft E of WL.**

### Bedrock elevation

Location accepted w/o verification by \_\_\_\_\_

**\_Ft S of NL.**

### Aquifer elevation

624-

**Lot Number**

# WATER WELL LOG

**I**

**Fried**

**FORMATIONS (Color, type of material, hardness, etc.)**

847  
217

624-

下



**PEERLESS-MIDWEST, INC.** Water Supply Contractors  
51255 BITTERSWEET ROAD / GRANGER, INDIANA 46530 / 219 272-9050

## TEST DRILLING REPORT

Well No 74B City Columbia City County Whitley  
Owner City of Columbia City Township Columbia  
(John R. Snell Engineers, Inc.) Section 11

Location 720' S. of Van Buren Street and 180' W. of Blue River and 560' SW of existing  
State Indiana  
Well #7 - Proposed Well #8 Site.

### GRADE ELEVATION ABOVE MEAN SEA LEVEL —

FORMATION	Top of Formation	Bottom of Formation	Thickness	Static Water Level	50% SIZE
Yellow clay	0	15	15		
Gray clay	15	32	17		
Medium sand and gravel * 40'	32	72	40	13'	.028
Clay * 2'	72	74	2		
Fine silty sand with clay * 88'	74	162	88		
Fine to medium sand with gravel * 45'	162	207	45	28'	.021
Sand, gravel, boulders * 3'	207	210	3	28'	.063
Fractured blue shale	210	212	2		

6-7/8 " Dia. hole drilled by Rotary Date completed 11-8-74

2 " casing set to 204 " screen set from 204 ' to 207 '

40 ft. of 16" W.W. screen recommended from 170 ' to 210 '

Recommended screen slot size: Tubular well .020 Gravel Pack well .050

Water analysis: Iron \_\_\_\_\_ PPM, hardness \_\_\_\_\_ GPG, PH \_\_\_\_\_

Job No 555 Driller G. Hanlin and L. Dickson

# DEURLUK

COUNTY Whitley TWP. 3/N RGE. 9E SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE SEC. 11

1000 Ft W of EL.

Ground Elevation 840

Municipal  
Wall Field

**Field Located**      **By** \_\_\_\_\_ **Date** \_\_\_\_\_

**\_\_\_\_\_ Ft N of SL.**

**Depth to bedrock**

**Courthouse Location** By \_\_\_\_\_ **Date** \_\_\_\_\_

**\_\_\_\_\_ Ft E of WL**

### Bedrock elevation

Location accepted w/o verification by John 2/75

2500 Ft S of NL.

**Aquifer elevation.**

Test  
well  
test Number 745

Well 8 drilled  
at this site. 2-75

**WATER WILL LOG**

**FORMULATIONS (Color, type of material, hardness, etc.)**

1

120

5.

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled WHITLEY Civil Township COLUMBIA  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

720' S. OF VAN BUREN ST, + 180' W. OF BLUE RIVER, 560' SW. OF EXISTING WELL #7

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner CITY OF COLUMBIA CITY Address COLUMBIA CITY, IND

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: PEERLESS - MIDWEST, INC.

Address GRANGER, IND

Name of Drilling Equipment Operator: G. HANLIN + L. DICKERSON

**WELL INFORMATION**

Depth of well: 212' Date well was completed: 11-8-74

Diameter of casing or drive pipe: 2" Total Length: 204

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 2" Length: 8" Slot Size: 1020

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☒ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature R. J. Williams

Date JAN. 31, 1974

**FOR ADMINISTRATIVE USE ONLY**

(Well driller does not fill out)

COUNTY \_\_\_\_\_ TWP. \_\_\_\_\_ RGE. \_\_\_\_\_ ¼ \_\_\_\_\_ ¼ \_\_\_\_\_ SEC \_\_\_\_\_ Subdivision Name \_\_\_\_\_

**Topo Map** \_\_\_\_\_ **\_\_\_\_\_ Ft W of EL.** **Ground Elevation** \_\_\_\_\_

Field Located By \_\_\_\_\_ Date \_\_\_\_\_ F1 N of SL. Depth to bedrock \_\_\_\_\_

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_ Ft E of WL. Bedrock elevation \_\_\_\_\_

Location accepted w/o verification by \_\_\_\_\_ Ft S of NL. Aquifer elevation \_\_\_\_\_ Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

5

ELANGE OR

CHANGE MOTOR OIL & GREASE X REPACK PUMP X GREASE PUMP X

PUMP IS PRESENTLY DEVELOPING 1500/2280 GPM 119/276 TDH; SHUT OFF HEAD            FT.

MATERIALS NEEDED TO CLEAN WELL: \_\_\_\_\_

---

INSPECTED BY Tony J. Ross

~~COLUMBIA; TITAN~~

Perm. Well #8

**Subdivision Name**

PEWEESS-MADWEST

Depth to bedrock 194 2-14-75

Bedrock elevation 646

Aquifer elevation 646 Lot Number \_\_\_\_\_

# WATER WELL LOG

**FORMATIONS (Color, type of material, hardness, etc.)**

Tab.	
------	--



**PEERLESS-MIDWEST, INC.** Water Supply Contractors  
51255 BITTERSWEET ROAD / GRANGER, INDIANA 46530 / 219 272-9050

Page 1 of 2

## TEST DRILLING REPORT

Well No. 75A City Columbia City County Whitley  
Owner City of Columbia City Township Columbia  
(John R. Snell Engineers, Inc.) Section 2

Location \_\_\_\_\_ State Indiana

Strough Property - 150' S. of Van Buren Street and 450' E. of existing Well #6 and  
625' E. of Road into Water Treatment Plant

GRADE ELEVATION ABOVE MEAN SEA LEVEL —

FORMATION	Top of Formation	Bottom of Formation	Thickness	Static Water Level	50% SIZE
Yellow Clay	0	11	11		
Blue Clay	11	14	3		
Sand with Fine Gravel	14	23	9	13'	
Blue Clay	23	26	3		
Sand and Gravel	26	33	7	13'	
Gray Clay	33	39	6		
Sand	39	48	9	15'	
Blue Clay	48	65	17		
Medium Sand	65	100	35	15'	.019
Coarse Sand with Fine Gravel	100	138	38	15'	.024
Blue Clay	138	143			
Medium Gravel and Sand	143	157	14	15'	
CONTINUED ON PAGE 2					

7-3/8" Dia. hole drilled by Rotary Date completed 4-9-75

none " casing set to \_\_\_\_\_' \_\_\_\_\_' screen set from \_\_\_\_\_' to \_\_\_\_\_'  
40 ft. of 16" WW screen recommended from \_\_\_\_\_' to \_\_\_\_\_'

Recommended screen slot size: Tubular well .025 Gravel Pack well .050

Water analysis: Iron \_\_\_\_\_ PPM, hardness \_\_\_\_\_ GPG, PH \_\_\_\_\_

Job No. 555 Driller Ortman Drilling/R. Kent

# WATER WELL LOG

**(Well driller does not fill out)**

Columbia City  
test

COUNTY Whitley TWP. 31N RGE. 9E SEC 11

Subdivision Name

Topo Map Columbia City

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

**Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_**

Location accepted w/o verification by \_\_\_\_\_

           Ft W of EL.      Ground Elevation           

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

                     Ft E of WL.      **Bedrock elevation**                     

           Ft S of NL.      Aquifer elevation                 Lot Number           

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

Whitley

County in which well was drilled \_\_\_\_\_ Civil Township \_\_\_\_\_

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

LOC: East edge of Columbia City on Van Buren St. on S. side

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner \_\_\_\_\_ Address \_\_\_\_\_  
Peerless Midwest Well Drilling

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_  
51255 Bittersweet Road, Granger, Ind.

Ortman Drilling, Inc.

Name of Well Drilling Contractor: \_\_\_\_\_

Address \_\_\_\_\_  
717 S. Malfalfa Road, Kokomo, Indiana

Name of Drilling Equipment Operator: \_\_\_\_\_  
Ned O., John W., John L.

### WELL INFORMATION

Depth of well: Test Hole 243 ft. Date well was completed: April 9, 1975

Diameter of casing or drive pipe: 7-3/8 Bit Total Length: \_\_\_\_\_

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot Size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature \_\_\_\_\_ Ortman Drilling, Inc. in

April 15, 1975

Date \_\_\_\_\_

# WATER MILL LOG

[illegible][illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

WATER WELL RECORD

WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled WHITLEY Civil Township COLUMBIA

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

1125' S. OF VAN BUREN ST. & 100' E. OF W. PROPERTY LINE AND 20' W. OF DET. ROAD  
& 200' W. OF BLUE RIVER, 400' S.W. OF PROPOSED WELL No 8 (TIN # 746)

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner CITY OF COLUMBIA CITY Address COLUMBIA CITY, IND.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: PERLESS - MIDWEST INC.

Address GRANGER, IND.

Name of Drilling Equipment Operator: G. HANLIN & COKEY

WELL INFORMATION

Depth of well: 200' Date well was completed: 11-1-74

Diameter of casing or drive pipe: 2" Total Length: 203'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 2" Length: 6' Slot Size: .025

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☐ Stock ☒

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

Signature R. J. Walker

Date JAN-31, 1974

COUNTY \_\_\_\_\_ TWP. \_\_\_\_\_ RGE. \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ SEC \_\_\_\_\_ Subdivision Name \_\_\_\_\_

**\_\_\_\_\_ Ft W of EL.      Ground Elevation \_\_\_\_\_**

Ft N of SL.      Depth to bedrock \_\_\_\_\_

**Ft E of WL.** **Bedrock elevation** \_\_\_\_\_

**\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_**

[illegible]



**PEERLESS-MIDWEST, INC.** Water Supply Contractors  
51255 BITTERSWEET ROAD / GRANGER, INDIANA 46530 / 219 272-9050

## TEST DRILLING REPORT

Well No. 74A City Columbia City County Whitley

Owner City of Columbia City Township Columbia

(John R. Snell Engineers, Inc.)

Section 4 11

Location Proposed Well #9 State Indiana

1125' S. of Van Buren Street and 100' E. of W. Property Line and 20' W. of dirt road  
and 200' W. of Blue River, 400' SW of Proposed Well #8 (TW #74B).

GRADE ELEVATION ABOVE MEAN SEA LEVEL —

FORMATION	Top of Formation	Bottom of Formation	Thickness	Static Water Level	50% SIZE
Top soil and debris	0	3	3		
Clay	3	29	26		
Gravel and sand	29	30	1		
Clay	30	46	16		
Sand and gravel * 20'	46	66	20	16'	.033
Silty sand and clay * 68'	66	134	68		
Clay and boulders * 6'	134	140	6		
Silty clay with boulders * 14'	140	154	14		
Fine sand * 9'	154	163	9		
Clay and gravel * 3'	163	166	3		
Fine to medium sand and gravel * 40'	166	206	40	30'	.026
Boulders and sand * 3'	206	209	3	30'	.194
Shale	209				

6-7/8" Dia. hole drilled by Rotary Date completed 11-1-74

2" casing set to 203 ' 2" screen set from 203 ' to 206 '

40 ft. of 16" WW screen recommended from 169 ' to 209 '

Recommended screen slot size: Tubular well .025 Gravel Pack well .050

Water analysis: Iron \_\_\_\_\_ PPM, hardness \_\_\_\_\_ GPG, PH \_\_\_\_\_

Job No. 555 Driller G. Hanlin and Cockey

FOR ADMINISTRATIVE USE ONLY  
(Well driller does not fill out)

**BEDROCK**

COUNTY Whitley TWP. 31N RGE. 9E NW ¼ NE ¼ SE ¼ SEC 11

Test Well  
Columbia City  
Subdivision Name

Topo Map Columbia City 7½

1100 Ft W of EL.

Ground Elevation 835-40 Municipal

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

2600 Ft N of SL.

Depth to bedrock Well Field

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_ Ft E of WL.

Bedrock elevation Test

Location accepted w/o verification by Hick 2/25

\_\_\_\_\_ Ft S of NL.

Aquifer elevation Well  
Well Number 74A

WATER WELL LOG

FORMATIONS (Color, type of material, hardness, etc.)

To

From

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: \_\_\_\_\_

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: one mile north of Columbia City on State road 9

northwest of corner of 30 and 9

Name of owner: Spears & Dehner Address: Fort Wayne

Name of Well Drilling Contractor: Charles Zuber & Son

Address: 2315 Wayne Trace, Fort Wayne, Ind.

Name of Drilling Equipment Operator: Elmer Zuber

INFORMATION ON THE WELL

Completed depth of well: 155 ft. Date well was completed: June 27, 1962

Diameter of outside casing or drive pipe: 8" Length: 146'

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☐ For industry ☒ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☒ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 47 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between static level and water level at end of test)

Pumping Test: Hours tested 3 Rate 300 g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Elmer Zuber  
Date July 30 62

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Warrick Civil Township: \_\_\_\_\_

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: On the east side of Columbus City

West of the town of Columbus

Name of owner: Coniel Price Address: Columbus City

Name of Well Drilling Contractor: V. H. Bujak & Sons

Address: 2412 Stillman Rd

Name of Drilling Equipment Operator: V. H. Bujak

INFORMATION ON THE WELL

Completed depth of well: 153 ft. Date well was completed: Feb. 24-1960

Diameter of outside casing or drive pipe: 8 Length: 138

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 8 Length: 16 Slot size: 20-15

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☐ For industry ☒ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☒ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 22 ft.

Bailer Test: Hours tested 1 1/2 Rate 20 g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested 2 Rate 150 g.p.m. Drawdown 22 ft. static level and water level at end of test)

Signature: V. H. Bujak

Date: Feb. 24-1960

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: W. Kelly Co. Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: On Old State road 30 at the

East end of the Columbia City Limits. NE 1/4

S. 14-12 T. 31 N. R. 1 E

Name of owner: Mr. Bill Hare Address: Route 7 Columbia City

Name of Well Drilling Contractor: Mr. Bain Well Drilling

Address: Route 3, Columbia City, Ind.

Name of Drilling Equipment Operator: Mr. Bain

INFORMATION ON THE WELL

Completed depth of well: 110 ft. Date well was completed: Sept. 11, 1965

Diameter of outside casing or drive pipe: 2 in Length: 100 ft.

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 1 in Length: 30 in Slot size: 50" Gauge

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 60 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested 1 1/2 Rate 10 g.p.m. Drawdown \_\_\_\_\_ ft. static level and water level at end of test)

Signature Ronald L. Bain

Date Sept. 11, 1965

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information; it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources Department of Conservation.

## A circular black and white stamp. The outer ring contains the text "DEPARTMENT OF THE INTERIOR" at the top and "BUREAU OF LAND MANAGEMENT" at the bottom. In the center, the word "RECEIVED" is printed in large, bold, capital letters. Below "RECEIVED" is the date "JUN 1962". At the bottom of the center, it says "Office of the Director". There is a small arrow pointing to the right, located between the date and the "Office of the Director" text. The stamp is slightly tilted and has a grainy, high-contrast appearance.

### INFORMATION ON WELL LOCATION

Rd. 30 at Killian Auto used parts (junk yard)

Name of Drilling Equipment Operator: W. A. R. B. - 20-06

Date Jan 7 1960

**FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET**

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD



INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Whitley  
Congressional township: Columbia Range: \_\_\_\_\_ Number of section: 12  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 1/2 mile East of Columbia City  
on 205 - south side of road

Name of owner: Paul Zumburn Address: Columbia City RR #4  
Name of Well Drilling Contractor: Bill Corbin  
Address: Columbia City RR #4  
Name of Drilling Equipment Operator: Bill Corbin

INFORMATION ON THE WELL

Completed depth of well: 60 ft. Date well was completed: 7-24-64  
Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of inside casing or liner: 2" Length: 18  
Diameter of Screen: 1 1/2" Length: 36 Slot size: 50  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐  
Static water level in completed well (Distance from ground to water level) 38 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested 3 Rate 1000 g.p.m. Drawdown \_\_\_\_\_ ft. static level and water  
level at end of test)

Signature William Corbin

Date 8-2-64

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

East of Columbia City on U.S. 30 to Highway East  
1 mile south of Rt 205 intersection west of 30  
on 100 South

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Mr. Coys Real Estate Address Churubus  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: GORDON & SLOFFER INC  
Address Churubus Ind.

Name of Drilling Equipment Operator: Jack Gordon

**WELL INFORMATION**

Depth of well: 50 Date well was completed: 10-13-72

Diameter of casing or drive pipe: 2" Total Length: 54'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 30" Slot Size: #60

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 13' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested 1 Rate 12 g.p.m. Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Jack Gordon  
Date 10-13-72

**(Well driller does not fill out)**

**Subdivision Name****\_\_Ft W of EL.**

**Ground Elevation.**

# Gateway

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

\_Ft N of SL.

**Depth to bedrock.**East

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

\_Ft E of WL.

**Bedrock elevation.**

Location accepted w/o verification by Hch 10/32

**\_\_Ft S of NL.**

**Aquifer elevation** .

**Lot Number** \_\_\_\_\_

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



WATER WELL RECORD

WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Hwy East of Columbia City on U.S. 30 to 100 S  
go west.

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner McCoy Real Estate Address Churubusco

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: GORDON & SLOFFER INC

Address Churubusco

Name of Drilling Equipment Operator: Jack Gordon

WELL INFORMATION

Depth of well: 50' Date well was completed: 8-1-72

Diameter of casing or drive pipe: 2" Total Length: \_\_\_\_\_

Diameter of liner (if used): 1" Total Length: 44'

Diameter of Screen: 1" Length: \_\_\_\_\_ Slot Size: #1

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 30' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested 1 Rate 15 g.p.m. Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Jack Gordon

Date 8-1-72

**(Well driller does not fill out)**

**Subdivision Name**

**Ground Elevation.**

# Gateway

**Ft N of SL.**

**Depth to bedrock.**

Est

\_\_\_\_\_ Ft E of WL.

### Bedrock elevation

                     Ft S of NL.

### Aquifer elevation

**Lot Number** \_\_\_\_\_

# WATER WELL LOG

[illegible]

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Gateway East of Columbia City

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner McCoy, Ral & Co Address Churubusco

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: GORDON & SLOFFER INC

Address Churubusco

Name of Drilling Equipment Operator: Jack Gordon

**WELL INFORMATION**

Depth of well: 68' Date well was completed: 7-18-72

Diameter of casing or drive pipe: 2" Total Length: 64'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 30 Slot Size: +160

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 15' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested 1 Rate 12 g.p.m. Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Jack Gordon

Date 7-19-72

COUNTY Whitley TWP. 31N RGE. 9E  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE SEC. 12

**Field Located** By \_\_\_\_\_ **Date** \_\_\_\_\_

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

Location accepted w/o verification by Hch 10/72

\_\_\_\_\_ Ft W of EL.

**Ground Elevation.**

\_\_\_\_\_ Ft N of SL.

**Depth to bedrock.**

                     Ft E of WL.

**Bedrock elevation.**

                     Ft S of NL.

**Aquifer elevation .**

**Subdivision Name**

# Gateway East

**Lot Number** \_\_\_\_\_

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

State Form 35880

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

West 1/4 mile of US-30 on State Rd 205

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Leon Hunter Lodge Address \_\_\_\_\_

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Walter Laugh & Schneider

Address Rt 2, Columbia City, Ind.

Name of Drilling Equipment Operator: Walter Laugh

**WELL INFORMATION**

Depth of well: 80 ft. Date well was completed: Oct 1, 1980

Diameter of casing or drive pipe: 4" inch Total Length: 77 ft.

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 4" inch Length: 3 ft. Slot Size: 60

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 27 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate 15 g.p.m. Drawdown 10 ft.

Signature Walter Laugh

Date Oct 1, 1980

**(Well driller does not fill out)**

Topo Map Columbia City, Ind

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

**Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_**

Location accepted w/o verification by \_\_\_\_\_

**Ft W of EL**

**Ground Elevation.**

**\_\_Ft N of SL.**

**Depth to bedrock.**

**\_\_Ft E of WL.**

### Bedrock elevation.

**\_\_Ft S of NL.**

### Aquifer elevation

**Lot Number**

**WATER WELL LOG**

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204

Telephone 317-232-4160

**WATER WELL RECORD**

Form 36000

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled

Whitley

Civil Township

Columbia

Driving directions to the well location:

Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

In Antway east Addition at east side  
of Columbia City along U.S.-30

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner

Gerry Ramsey

Address

R<sup>2</sup>9, Columbia City, Ind.

Building Contractor

Address

Name of Well Drilling Contractor:

Hollenbaugh Well Drilling

Address

R<sup>2</sup>9, Columbia City, Ind.

Name of Drilling Equipment Operator:

Marv Hollenbaugh

**WELL INFORMATION**

Depth of well:

124 ft.

Date well was completed:

March 11, 1982

Diameter of casing or drive pipe:

4 1/2 inch

Total Length:

131 ft.

Diameter of liner (if used):

Total Length:

Diameter of Screen:

5 T

Length:

3 ft.

Slot Size:

60

Type of Well:

Drilled ☒

Gravel Pack ☐

Driven ☐

Other

Use of Well:

For Home ☒

For Industry ☐

For Public Supply ☐

Stock ☐

Method of Drilling:

Cable Tools ☐

Rotary ☒

Rev. Rotary ☐

Jet ☐

Bucket Rig ☐

Static water level in completed well (Distance from ground to water level)

26

feet

Bailer Test:

Hours Tested

Rate

g.p.m.

Drawdown

ft.

(Drawdown is the difference between static level and water level at end of test)

Pumping Test:

Hours Tested

Rate

20 g.p.m.

Drawdown

10 ft.

Signature

Marv Hollenbaugh

Date

March 11, 1982

(Well driller does not fill out)

Gateway  
East  
Subdivision Name

Location accepted w/o verification by \_\_\_\_\_

**Aquifer elevation \_\_\_\_\_ Lot Number \_\_\_\_\_**

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

State Form 38880

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbus  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Township 31-N - Range 9-E Section No. 12 West of N.S. 30  
on 1005 1/4 mile. Turn right into Gateway east addition  
to the first street turn left. Go to the end of street house on left

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Ralph Shatzen Address R #2, Columbus City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Hollenbaugh & Schneider  
Address R #2, Columbus City, Ind.

Name of Drilling Equipment Operator: Mar Hollenbaugh

### WELL INFORMATION

Depth of well: 119 ft. Date well was completed: July 14, 1980

Diameter of casing or drive pipe: 4 1/2" inch Total Length: 116 ft.

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 5" T. Length: 3 ft. Slot Size: 50

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 15 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 2 Rate 20 g.p.m. Drawdown 10 ft.

Signature Mar Hollenbaugh

Date \_\_\_\_\_

## WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757  
WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Union  
Congressional township: 31-N Range: 10-E Number of section: 7  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: US 30 East of Cal City to Co Rd  
100 S Turn West to East Gate.

Name of owner: Royal Monarch Homes Address: Cal City  
Name of Well Drilling Contractor: Roy Richards  
Address: RC Cal City  
Name of Drilling Equipment Operator: Roy Richards

INFORMATION ON THE WELL

Completed depth of well: 170 ft. Date well was completed: Oct 5-78  
Diameter of outside casing or drive pipe: 4" Length: 20  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: 3" Length: 7' Slot size: 40  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐  
Static water level in completed well (Distance from ground to water level) 6 ft.  
air Batter Test: Hours tested 2 Rate 65 g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
static level and water  
Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Roy Richards  
Date 10-6-78

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log.

Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

(Well driller does not fill out)

11. 12. 1941

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia  
Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of sections: 12 ?  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 2 Miles East of Columbia City on  
100S. - No plat been location 10/24 24

Name of owner: Bonny Hild Address: B9 Cd. City  
Name of Well Drilling Contractor: Corlin Well Drilling  
Address: RR 2 Columbia City Indiana 46725  
Name of Drilling Equipment Operator: \_\_\_\_\_

INFORMATION ON THE WELL

Completed depth of well: 79 ft. Date well was completed: 8-20-74  
Diameter of outside casing or drive pipe: 2 3/8 Length: 18  
Diameter of inside casing or liner: 2" Length: 18  
Diameter of Screen: 1 1/4 Length: 830 Slot size: 15  
Type of Well: Drilled ☐ Gravel Pack ☐ Driven ☒ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐  
Static water level in completed well (Distance from ground to water level) 30 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
static level and water  
Pumping Test: Hours tested 2 Rate 30 g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Steven Corbin  
Date 9-24-74

[illegible]

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.



FOR ADMINISTRATIVE USE ONLY (Well driller does not fill out)				
County	Twp.	Rge.	Sec.	
Whitley	31N	8E	NE - NW	12
Top map	Colo. Pica City 7 1/2	FI W of E	Ground elevation	850
Field located by	DTK	Date	9/2/86	FI N of SL
Courthouse location		Date		FI E of WL
Location accepted into verification by	Maner at plant verified location	Date	1000	FI S of NL
			Bedrock elevation	748
			Aquifer elevation	

[illegible]

**SKETCH SHOWING LOCATION**  
Locate with reference to highways, intersecting county roads, and distinctive landmarks.

N

30

Columbia City

Well

W

E

S

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

East of Killian & Son Auto used parts 3/4 mile on 1005

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Ralph Killian Address R #2, Columbia City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Hollenbaugh & Schneider

Address R #2, Columbia City, Ind.

Name of Drilling Equipment Operator: Hollenbaugh & Schneider

### WELL INFORMATION

Depth of well: 350 ft Date well was completed: 10-11-79

Diameter of casing or drive pipe: 4 1/2 inch Total Length: 281 ft

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot Size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 38 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 2 Rate 15 g.p.m. Drawdown 12 ft.

Signature Mr. Hollenbaugh

Date Oct 11, 1979

**(Well driller does not fill out)**

Topo Map Chambersburg, Pa.

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

Location accepted w/o verification by \_\_\_\_\_

**Ft W of EL.**      **Ground Elevation**\_\_\_\_\_

\_Ft N of SL.      Depth to bedrock \_\_\_\_\_

**Ft E of WL.** **Bedrock elevation**\_\_\_\_\_

Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbian

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

East of Columbia City on Rd. 30 to 100 E. west  
on 100 E. to Highway East Subdivision

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner McCoy Real Estate Address Churubuses

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: \_\_\_\_\_

Address Churubuses

Name of Drilling Equipment Operator: Jack Gordon

### WELL INFORMATION

Depth of well: 59' Date well was completed: 10-16-72

Diameter of casing or drive pipe: 2" Total Length: 5' 5"

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 30" Slot Size: 5/16"

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 26' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 1 Rate 12 g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

Signature Jack Gordon

Date 10-14-72

**FOR ADMINISTRATIVE USE ONLY**  
(Well driller does not fill out)

**(Well driller does not fill out)**

[illegible]

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: East of Columbia City - 1 mile

on H.S. 30

Name of owner: Clarence Lindsey Address: R.R. Col. City

Name of Well Drilling Contractor: M. C. Wheeler & Sons

Address: Route #6 Columbia City, Indiana

Name of Drilling Equipment Operator: Bill Wheeler

INFORMATION ON THE WELL

Completed depth of well: 54 ft. Date well was completed: June 21, 1960

Diameter of outside casing or drive pipe: 4" Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 4" Length: \_\_\_\_\_ Slot size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 20 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Spencer Chapp

Date June 23, 1960

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757

WATER WELL RECORD

*Whitley 1*

INFORMATION ON WELL LOCATION

County in which well was drilled: *Whitley* Civil Township: \_\_\_\_\_

Congressional township: *31 N* Range: *9 E* Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: *Columbia City, Well # 15 - 1st*

Name of owner: *Columbia City Water Dept* Address: *Columbia City*

Name of Well Drilling Contractor: \_\_\_\_\_

Address: \_\_\_\_\_

Name of Drilling Equipment Operator: \_\_\_\_\_

INFORMATION ON THE WELL

Completed date of well: *11-16-60* Date well was completed: \_\_\_\_\_

Diameter of outside casing: *12"* Length: *75 ft*

Diameter of inside casing: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Size: \_\_\_\_\_

Type of Well: ☒ Drilled ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: ☐ For farm ☐ For public ☒ For stock ☐ \_\_\_\_\_

Method of Drilling: ☒ Casing ☐ Rotary ☐ Jet ☐ Driven ☐ \_\_\_\_\_

Static water level in completed well (Distance from ground to water level): *77.7* ft.

Bailer Test: Hours tested: \_\_\_\_\_ Rate: \_\_\_\_\_ g.p.m. Drawdown: \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested: \_\_\_\_\_ Rate: \_\_\_\_\_ g.p.m. Drawdown: \_\_\_\_\_ ft. level at end of test)

Signature *Tob alert for 2593 - no date*

Date *on citation*

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

Please include all information possible in the space provided for well location.  
As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: \_\_\_\_\_

Congressional township: 31N Range: 9E Number of section: 12  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: Columbia City East well. Between

St Highway 205  
[- + Vandave Ry ?

Name of owner: City Address: \_\_\_\_\_

Name of Well Drilling Contractor: Smith & Monroe, So. Bend

Address: \_\_\_\_\_

Name of Drilling Equipment Operator: \_\_\_\_\_

INFORMATION ON THE WELL

Completed depth of well: 300 ft. Date well was completed: \_\_\_\_\_

Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: \_\_\_\_\_

Type of Well: ☒ Drilled ☐ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: ☐ For home ☐ For industry ☒ For public supply City Stock ☐ \_\_\_\_\_

Method of Drilling: ☐ Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐ \_\_\_\_\_

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
static level and water

Pumping Test: Hours tested \_\_\_\_\_ Rate 350 g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature L. L. McDaniel Supt. Wtd.

Date T.A.K. Oct 22, 1951

## WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Titley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

South of Jct. 205 and 30 to 1st house on East Side

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Lottie Quinn Address General Delivery, Columbia City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M.C. Wheeler and Sons, Inc.

Address Rural Route 6 Columbia City, Indiana

Name of Drilling Equipment Operator: Harold Wheeler

**WELL INFORMATION**

Depth of well: 185 Date well was completed: 8-10-76

Diameter of casing or drive pipe: 4 inch Total Length: 182

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 4" Length: 3' Slot Size: 18

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 30 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate air g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Signature Nancy Brunner

Date 4-13-77





DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: W. Litchy Civil Township: Columbia Twp

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: one Half mile east on Ind. 20.5 out of Columbia

City on south side of road.

on it just down on hill

little new house just

Name of owner: Ralph Murrell Address: R# 7

Name of Well Drilling Contractor: M. C. W. Heeler & Sons

Address: R# 6 Columbia City, Indiana

Name of Drilling Equipment Operator: Harold W. Heeler

INFORMATION ON THE WELL

Completed depth of well: 198 ft. Date well was completed: 7-17-59

Diameter of outside casing or drive pipe: 2" Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 3' Slot size: 50 gage

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between static level and water level at end of test)

Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Bill W. Heeler

Date 7-22-59

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



WATER WELL RECORD

WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.  
East of Killian's on Auto used parts 1/4 mile on 1005

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner George Coverstone Address R#9, Columbia City, Ind.  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_  
Name of Well Drilling Contractor: Hollenbaugh & Schneider  
Address R#2, Columbia City, Ind.  
Name of Drilling Equipment Operator: Hollenbaugh & Schneider

WELL INFORMATION

Depth of well: 214 ft. Date well was completed: June 15, 1979  
Diameter of casing or drive pipe: 4 1/2 inch Total Length: 211 ft.  
Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_  
Diameter of Screen: 4 inch Length: 3 ft. Slot Size: 50  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐  
Static water level in completed well (Distance from ground to water level) 48 feet  
Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.  
Pumping Test: Hours Tested 2 Rate 20 g.p.m. Drawdown 5 ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Mark Hollenbaugh  
Date June 15, 1979

22

Topo Map Columbia City 975

                     Ft W of EL.      Ground Elevation                     

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

\_\_\_\_\_ Ft E of WL.      Bedrock elevation \_\_\_\_\_

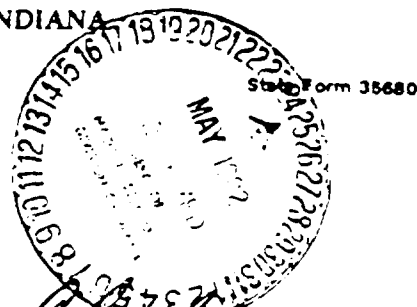
\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204

Telephone 317-232-4160



**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Columbia Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

In Gateway east Addition at east side  
of Columbia City along US-30

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Lester Lahr Address R#9, Columbia City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Hollenbaugh Well Drilling

Address R#2, Columbia City, Ind.

Name of Drilling Equipment Operator: Mar Hollenbaugh

**WELL INFORMATION**

Depth of well: 167 ft. Date well was completed: April 23, 1982

Diameter of casing or drive pipe: 4 1/2 inch Total Length: 164 ft.

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 5T Length: 3 ft. Slot Size: 45

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 30 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 2 Rate 20 g.p.m. Drawdown 10 ft.

Signature Mar Hollenbaugh

Date April 23, 1982

Ja. a.  
East

Subdivision Name

\_\_\_\_\_ Ft W of EL.      Ground Elevation \_\_\_\_\_

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

           Ft E of WL.      Bedrock elevation                                          

\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

[illegible]

**FORMATIONS (Color, type of material, hardness, etc.)**

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

State Highway 205 east of U.S. 30 1st. place  
on south side road.

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Ralph Morroff Address R.R. 7<sup>th</sup> Col. City  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M. C. Wheeler + Son's  
Address R.R. 6<sup>th</sup> Col. City  
Name of Drilling Equipment Operator: Harold Wheeler

**WELL INFORMATION**

Depth of well: 210' Date well was completed: 6-27-63  
Diameter of casing or drive pipe: 4" Total Length: 207  
Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_  
Diameter of Screen: 4" Length: 3' Slot Size: 15  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐  
Static water level in completed well (Distance from ground to water level) 35 feet  
Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.  
Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Darlene Wheeler  
Date Sept. 11, 1973

**(Well driller does not fill out)**

Topo Map Columbia City

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

Location accepted w/o verification by Hick 1/24

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

\_\_\_\_\_ Ft E of WL.      Bedrock elevation\_\_\_\_\_

           Ft S of NL.      Aquifer elevation                 Lot Number           

Plotbook location 174

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia  
Congressional township: 31N Range: 9E Number of section: 12  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 1st House on West Side of Road on Road 30  
not after pass Jct. of 30 + 205 R B1 - Ralph Killian Place  
SW SE Sec. 12 T 31 N R 9E

Name of owner: Richard Killian Address: RR #7 Columbia City, Ind.  
Name of Well Drilling Contractor: M. C. Wheeler & Sons, Inc.  
Address: RR #6 Columbia City, Indiana  
Name of Drilling Equipment Operator: Harold Wheeler

INFORMATION ON THE WELL

Completed depth of well: 255 ft. Date well was completed: 11-18-70  
Diameter of outside casing or drive pipe: 4" Length: 230  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: Rockwell  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐  
Static water level in completed well (Distance from ground to water level) 45 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate 50 g.p.m. Drawdown 0 ft. (Difference between  
static level and water  
Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature

Jerry Rhodes

Date

2-25-71

## WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.  
East of Columbia City on Business 30 about 2 1/2 miles on Rightside.

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Tom Tenney Address R # 9 Columbia City, Indiana  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_  
Name of Well Drilling Contractor: M.C. Wheelers & Sons Inc.  
Address R # 6 Columbia City, Indiana  
Name of Drilling Equipment Operator: Kim Wheeler

**WELL INFORMATION**

Depth of well: 120' Date well was completed: 6/12/79  
Diameter of casing or drive pipe: 4" Total Length: 117'  
Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_  
Diameter of Screen: 4" Length: 3' Slot Size: 15 Slot  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐  
Static water level in completed well (Distance from ground to water level) 70 feet  
Bailer Test: Hours Tested \_\_\_\_\_ Rate Air g.p.m. Drawdown 0 ft. (Drawdown is the difference between static level and water level at end of test)  
Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown 0 ft.

Signature Kim Wheeler  
Date 2/6/80

**(Well driller does not fill out)**

Topo Map Columbia City 7 1/2

\_\_\_\_\_ Ft W of EL      Ground Elevation \_\_\_\_\_

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

                     Ft E of WL.      Bedrock elevation                     

\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MEIrose 3-6757

WATER WELL RECORD



INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia  
Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 3 miles south east of Columbia City  
on the Rader Road to Sherwood Forest Addition  
Lot no 3. for  
Clingerman Live Here  
Name of owner: Mr. Harold Wainick Address: Route #5 Columbia City  
Name of Well Drilling Contractor: Mon Bair Well Drilling  
Address: Route 3, Columbia City, Indiana  
Name of Drilling Equipment Operator: Mon Bair

INFORMATION ON THE WELL

Completed depth of well: 80 ft. Date well was completed: October 21, 1967  
Diameter of outside casing or drive pipe: 2 in. Length: 76 ft.  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: 1 in. Length: 30 in. Slot size: 60 # Gauge  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐  
Static water level in completed well (Distance from ground to water level) 40 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested 1 1/2 Rate 12 g.p.m. Drawdown \_\_\_\_\_ ft. static level and water  
level at end of test)

Signature Harold L. Bair  
Date October 21, 1967

[illegible]

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water 3

FOR ADMINISTRATIVE USE ONLY  
(Well driller does not fill out)

by Meghna

$$\begin{array}{r} 821 \\ 73 \\ \hline 748 \end{array}$$

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204

Telephone 317-232-4160

State Form 35680

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

East of Col. City on Rader Rd to  
Sherwood Forest addition

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Phil Nivley Address R#9 Columbia City

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M. C. Wheeler & Sons Inc.

Address R#6 Columbia City, Ind.

Name of Drilling Equipment Operator: Jim Wheeler

### WELL INFORMATION

Depth of well: 105 Date well was completed: 5-29-80

Diameter of casing or drive pipe: 4" Total Length: 102

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 3" Length: 3' Slot Size: 18

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 40 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown 40 ft.

(Drawdown is the difference between static level and water level at end of test)

Signature [Signature]

Date 2-25-81

**(Well driller does not fill out)**

Heinrich Dorn.

Topo Map Columbia City 72

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

Location accepted w/o verification by \_\_\_\_\_

                     Ft W of EL      Ground Elevation                     

           Ft N of SL.      Depth to bedrock                      

                     Ft E of WL.      Bedrock elevation                     

                     Ft S of NL.      Aquifer elevation                           Lot Number                     

# WATER WELL LOG

[illegible]

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.  
Just 30 E. - Industrial Park

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Moose Lodge Address Columbia City, In.  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_  
Name of Well Drilling Contractor: M. E. Whulst & Sons, Inc.  
Address R.R. #6, Columbia City, In. 46725  
Name of Drilling Equipment Operator: Kim Whulst

**WELL INFORMATION**

Depth of well: 212' Date well was completed: 4-1-78  
Diameter of casing or drive pipe: 4" Total Length: 215'  
Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_  
Diameter of Screen: 4" Length: 3' Slot Size: 18  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐  
Static water level in completed well (Distance from ground to water level) 25 feet  
Bailer Test: Hours Tested \_\_\_\_\_ Rate 15 g.p.m. Drawdown 0 ft. (Drawdown is the difference between static level and water level at end of test)  
Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Signature Nancy Brunner  
Date 4-17-78

(Well driller does not fill out)

Уссу

117058

COUNTY Winn TWP. 51N RGE. 9E SEC 13 Subdivision Name

Topo Map Columbia City La

Field Located By \_\_\_\_\_ Date \_\_\_\_\_

Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_

Location accepted w/o verification by \_\_\_\_\_

**Ft W of EL**      **Ground Elevation** \_\_\_\_\_

Ft N of SL. Depth to bedrock \_\_\_\_\_

     Ft E of WL.      Bedrock elevation                                          

Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

3-

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

1st Brick House on Rt. Hand Side on Lincolnway Toward  
Columbia City after leave New Dual U.S. 30.

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Mr. John Eycart Address RR #9 Columbia City, Indiana

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M. C. Wheeler & Sons, Inc.

Address RR #6 Columbia City, Indiana

Name of Drilling Equipment Operator: Kim Wheeler

### WELL INFORMATION

Depth of well: 58 Date well was completed: 11-10-72

Diameter of casing or drive pipe: 2" Total Length: 55'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 30" Slot Size: 50 Gause

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 40' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

Signature Jerry Rhodes  
Date 12-8-72

(Well driller does not fill out)

Lot Number.

No plotbook location

# WATER WELL LOG

[illegible]

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

East of Columbia City on Old State Road 30-1/2 miles  
RUTA Tooling Building-

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Jack Reese Address R.R. 9<sup>th</sup> Col. City  
Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M. C. Wheeler & Son's  
Address R.R. 6<sup>th</sup> Col. City

Name of Drilling Equipment Operator: Kim Wheeler

### WELL INFORMATION

Depth of well: 62' Date well was completed: 4-20-73

Diameter of casing or drive pipe: 2" Total Length: 59

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 2" Length: 30" Slot Size: 50 Gause

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☐ For Industry ☒ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 30 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown 0 ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Signature Marlene Wheeler

Date Sept. 10, 1973

$$h^1 L \sim A \sim$$

Topo Map Columbia City

           Ft W of EL.      Ground Elevation                      

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

                     Ft E of WL.      **Bedrock elevation**                     

\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whiting Civil Township: Columbian

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: 13

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets or distinctive landmarks: First house east of Elmer river bridge on Rader Rd.

Name of owner: Stanley Kord Address: R. 5, Columbus City, Ind.

Name of Well Drilling Contractor: Hollenbaugh Garage

Address: R. 2, Columbus City, Ind.

Name of Drilling Equipment Operator: Mar Hollenbaugh

INFORMATION ON THE WELL

Completed depth of well: 130 ft. Date well was completed: Oct. 8, 1962

Diameter of outside casing or drive pipe: 2" Length: 127 ft

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 2 ft Slot size: 21 Slot

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 20 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested 4 Rate 15 g.p.m. Drawdown 3 ft. static level and water level at end of test)

Signature Mar Hollenbaugh

Date Oct 8, 1962

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

# WATER WELL LOG

FORMATIONS (Color, type of material, hardness, etc.)

From

To

Clay	0	30
Sand 30'	30	60
Clay	60	70
Gravel 10'	70	80
Clay	80	100
Hard sand	100	124
Gravel 6'	124	130

REMARKS:

COUNTY: Whitley TWP 21 22 RGE. 9 6 NW 1/4 NE 1/4 SE 1/4 SEC. 13

Topo. Map: Greenfield City Loc. accepted w/o verification Yes 8/15 No 1102 W. of East line

El. of grnd. surface at well: 815 Courthouse Loc. By UES Date 10/23/65

Depth to bedrock: 130 Field located By UES Date 10/23/65

Well log processed by: UES 4/24/65 Placed in Master Well Log File Date 10/23/65

OR INDEPENDENTLY (Well Driller does not fill out)

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

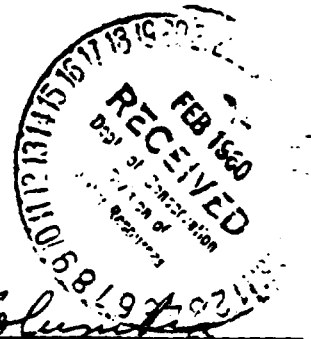
An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD



INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbian

Congressional township: \_\_\_\_\_ Range: 9E Number of section: 13  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: 1 1/2 mi east of Col. City just off

the Rader road

ground to left - past bridge

Name of owner: Walc Judd Address: RR# 5 Col City

Name of Well Drilling Contractor: B & K Well Drilling

Address: RR# 5 Col City

Name of Drilling Equipment Operator: Lynn Kyler

134 INFORMATION ON THE WELL

Completed depth of well: 434 ft. Date well was completed: Dec 26

Diameter of outside casing or drive pipe: 2" Length: 130

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 1 Length: 30 Slot size: 60

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 15 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested 1 Rate 15 g.p.m. Drawdown \_\_\_\_\_ ft. static level and water level at end of test)

Signature Ben Hawthorn

Date Feb 21 1960

[illegible]

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia  
Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: East of Columbia City on old us 30  
1 mile first lot East of Payer Body Shop  
on north side of road

Name of owner: Clifford Gibson Address: Columbia City  
Name of Well Drilling Contractor: Allen Richards  
Address: Box #3 Columbia City Indiana  
Name of Drilling Equipment Operator: Allen Richards

INFORMATION ON THE WELL

Completed depth of well: 58 ft. Date well was completed: 4-14-64  
Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of inside casing or liner: 2" Length: \_\_\_\_\_  
Diameter of Screen: 1" Length: 3' Slot size: 150  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐  
Static water level in completed well (Distance from ground to water level) 36 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested 1 Rate 12 g.p.m. Drawdown 0 ft. static level and water  
level at end of test)

Signature Allen Richards  
Date 4-14-64

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation.

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD

INFORMATION ON WELL LOCATION

*Limestone*

County in which well was drilled: Whitley Civil Township: 31  
Congressional township: Columbia Range: 10 E Number of section: 17 + 18  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 2 Mi. East of Columbia City  
just off Rader Road.  
(300 E)

Name of owner: H. Jr. Studebaker Address: RR  
Name of Well Drilling Contractor: B & K Well Drilling  
Address: RR 2 Albion  
Name of Drilling Equipment Operator: James Kissinger

INFORMATION ON THE WELL

Completed depth of well: 395 ft. Date well was completed: June 9  
Diameter of outside casing or drive pipe: 4" Length: 254  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: \_\_\_\_\_  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☒  
Method of Drilling: Cable Tools ☒ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐  
Static water level in completed well (Distance from ground to water level) 50 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested 24 Rate 17 g.p.m. Drawdown 118 ft. static level and water  
level at end of test)

Signature Ben Hawthorn  
Date June 9 1962

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

$$\begin{array}{r} 843 \\ 254 \\ \hline 589 \end{array}$$

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Warrick Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: East of Columbia City on old 301 mile  
Rays Body Shop on north side of road

Name of owner: Rays Body Shop Address: Cosser

Name of Well Drilling Contractor: Allen Richards

Address: Rt # 13 Columbia City

Name of Drilling Equipment Operator: Allen Richards

INFORMATION ON THE WELL

Completed depth of well: 90 ft. Date well was completed: 4-15-64

Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of inside casing or liner: 2" Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 3' Slot size: 50

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 40 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested 1 Rate 10 g.p.m. Drawdown 0 ft. static level and water level at end of test)

Signature: Allen Richards

Date: 4-15-64

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation.

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia  
Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Township 31-N Range 9-E Section 13 North of the  
Ruler Rd on the Paige Rd No plot book location

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Tom Sroufe Address R#5, Columbia City, Ind.

Building Contractor Bill Corbin Address R#9, Columbia City, Ind.

Name of Well Drilling Contractor: Hollenbaugh & Schneider

Address R#2, Columbia City, Ind.

Name of Drilling Equipment Operator: Hollenbaugh & Schneider

### WELL INFORMATION

Depth of well: 280 ft. Date well was completed: Oct. 25, 1973

Diameter of casing or drive pipe: 4 inch Total Length: 236 ft.

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot Size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 17 feet

Bailer Test: Hours Tested 1 Rate 12 g.p.m. Drawdown 46 ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 1 Rate 12 g.p.m. Drawdown 46 ft.

Signature Mark Hollenbaugh

Date Oct. 25, 1973

**FOR ADMINISTRATION USE ONLY**  
(Well driller does not fill out)

**(Well driller does not fill out)**

Location Verified - ( ) unknown

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: \_\_\_\_\_

Congressional township: 31 N Range: 9 E Number of section: 14  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: Columbia City - So. well

At So. edge of town East of Highway #9

Name of owner: Columbia City Address: \_\_\_\_\_

Name of Well Drilling Contractor: Smith - Monroe, So. Bend

Address: \_\_\_\_\_

Name of Drilling Equipment Operator: \_\_\_\_\_

INFORMATION ON THE WELL

Completed depth of well: 325 ft. Date well was completed: \_\_\_\_\_

Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other ☐

Use of Well: For home ☐ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between

Pumping Test: Hours tested \_\_\_\_\_ Rate 350 g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature C. L. McDaniel Syntz Util.

Date T.M.F. Oct 22, 1951

[illegible]

One of 4 being pumped by city.

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation.

Columbia was  
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O. A. M.  
tried

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DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia  
Congressional township: \_\_\_\_\_ Range: 9 E Number of section: 14  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 1 mi south of Columbia City  
on State R.d. #9

Name of owner: Ronald Mossburg Address: RR 2 Columbia City  
Name of Well Drilling Contractor: B & F Well Drilling  
Address: RR # 2 Albion  
Name of Drilling Equipment Operator: Lynn K. Kyle

INFORMATION ON THE WELL

Completed depth of well: 116 ft. Date well was completed: Sept 10  
Diameter of outside casing or drive pipe: 2" Length: 112  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: 1 1/4" Length: 30" Slot size: 8  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐  
Static water level in completed well (Distance from ground to water level) 55 ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested 1 Rate 20 g.p.m. Drawdown \_\_\_\_\_ ft. static level and water  
level at end of test)

Signature Ben Sawchuk  
Date Sept 11

[illegible]

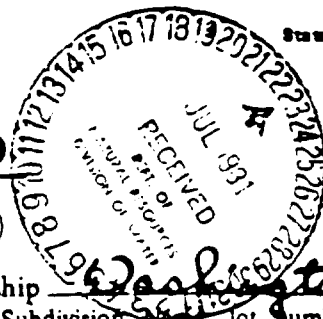
This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204

Telephone 317-232-4160

**WATER WELL RECORD**



State Form 36880

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Washington

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

1 3/4 miles south of 9+14 on  
west side of road

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Terry Hollenbrough Address R#2, Columbia City, I.N.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Hollenbrough Well Drilling

Address R#2, Columbia City, I.N.

Name of Drilling Equipment Operator: Terry Hollenbrough

**WELL INFORMATION**

Depth of well: 225 Date well was completed: May 30, 1981

Diameter of casing or drive pipe: 5 inch Total Length: 166

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot Size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 20 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 1 1/2 Rate 30 g.p.m. Drawdown 5 ft.

Signature Terry Hollenbrough

Date May 30, 1981

3

                     Ft W of EL.      Ground Elevation                     

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

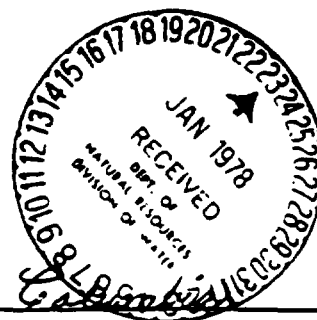
           Ft E of WL.      Bedrock elevation                        

\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled W. Kentucky Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

South on 9 out of Columbia City to 50 East  
turn left 3rd place on left.

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner U. A. W. Bldg. Address R.R. #2, Columbia City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M. C. Whelan & Sons, Inc.

Address R.R. #6, Columbia City, Ind. 46725

Name of Drilling Equipment Operator: Kim Whelan

### WELL INFORMATION

Depth of well: 92' Date well was completed: 11-3-77

Diameter of casing or drive pipe: 4" Total Length: 95'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 4" Length: 3' Slot Size: 18

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☒ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 25 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate 15 g.p.m. Drawdown 0 ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Signature Nancy Brunner

Date 12-2-77

**FOR ADMINISTRATIVE USE ONLY**  
(Well driller does not fill out)

(Well driller does not fill out)

Location accepted w/o verification by \_\_\_\_\_

\_\_\_\_\_ FIS of NL. \_\_\_\_\_

Aquifer elevation \_\_\_\_\_

Lot Number \_\_\_\_\_

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317

**WATER WELL RECORD**

**WELL LOCATION**

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Township 31-N Range 9-E Section No. 4 1 mile south  
of Columbia City on State Rd 9

**NAME OF WELL OWNER and/or BUILDING CONTRACTOR**

Well Owner Shella Rindfuss Address R#2, Columbia City, Ind.

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: Hollenbaugh & Schneider

Address R#2, Columbia City, Ind.

Name of Drilling Equipment Operator: Hollenbaugh & Schneider

**WELL INFORMATION**

Depth of well: 121 ft. Date well was completed: Jan. 5, 1978

Diameter of casing or drive pipe: 4" inch Total Length: 118 ft.

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 4" inch Length: 3 ft. Slot Size: 40

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 57 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested 1 Rate 15 g.p.m. Drawdown 9 ft.

Signature Mar. Hollenbaugh

Date Jan. 5, 1978

(Well driller does not fill out)

Topo Map Columbia City 1 1/2

           Ft W of EL.      Ground Elevation                      

\_\_\_\_\_ Ft N of SL.      Depth to bedrock \_\_\_\_\_

                     Ft E of WL.      Bedrock elevation                     

**\_\_\_\_\_ Ft S of NL.      Aquifer elevation \_\_\_\_\_      Lot Number \_\_\_\_\_**

**FORMATIONS (Color, type of material, hardness, etc.)**

[illegible]

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DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



BEDROCK  
LOCATE

## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled White Civil Township Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

South of Columbia City 1 mile on St. Rt. 9,  
on right side of rd.  
West N 83 L

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Lowell Drakey Address R.R. #2, Columbia City

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: G & H well Drilling

Address R.R. #5, Columbia City, Ind.

Name of Drilling Equipment Operator: G & H well Drilling,

### WELL INFORMATION

Depth of well: 322 Date well was completed: Sept. 24, 1973

Diameter of casing or drive pipe: 4" Total Length: 290'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot Size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 70 feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. \_\_\_\_\_ Drawdown \_\_\_\_\_ ft.

Pumping Test: Hours Tested 1 Rate 20 g.p.m. \_\_\_\_\_ Drawdown 20 ft.

(Drawdown is the difference between static level and water level at end of test)

Signature Steven M. Power

Date Sept. 26, 1973

4-2-1-

COUNTY Whitley TWP. 31N RGE. 9E \_\_\_\_\_ % \_\_\_\_\_ % SEC 14 Subdivision Name \_\_\_\_\_

Topo Map Columbia City \_\_\_\_\_ Ft W of EL. Ground Elevation \_\_\_\_\_

Field Located By \_\_\_\_\_ Date \_\_\_\_\_ Ft N of SL. Depth to bedrock 290

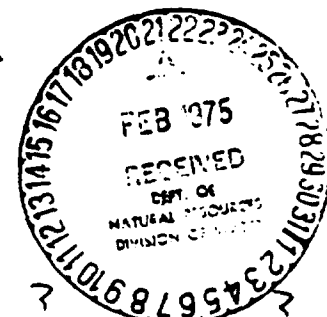
Courthouse Location By \_\_\_\_\_ Date \_\_\_\_\_ Ft E of WL. Bedrock elevation \_\_\_\_\_

Location accepted w/o verification by \_\_\_\_\_ Ft S of NL. Aquifer elevation \_\_\_\_\_ Lot Number \_\_\_\_\_

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46204  
Telephone 633-5267 Area Code 317



## WATER WELL RECORD

### WELL LOCATION

(Fill in completely - Refer to instruction sheet)

County in which well was drilled Whitley Civil Township Union - Columbia

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

South of Columbia City on St. Road 9 to 200 S, turn  
East to 2nd House on North Side.  
No plotbook location 2/75 Hdb

### NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner Paul Burkett Address R.R. #9 Columbia City, Indiana

Building Contractor \_\_\_\_\_ Address \_\_\_\_\_

Name of Well Drilling Contractor: M.C. Wheeler & Sons, Inc.

Address R #6 Columbia City, Indiana

Name of Drilling Equipment Operator: Thomas Wheeler

### WELL INFORMATION

Depth of well: 110' Date well was completed: 10-28-74

Diameter of casing or drive pipe: 4" Total Length: 107'

Diameter of liner (if used): \_\_\_\_\_ Total Length: \_\_\_\_\_

Diameter of Screen: 4" Length: 3' Slot Size: 15

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For Home ☒ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 80' feet

Bailer Test: Hours Tested \_\_\_\_\_ Rate 20 g.p.m. Drawdown 0 ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft.

Signature Jerry Rhodes  
Date 11-26-74

# WATER WELL LOG

[illegible]

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209  
MElrose 3-6757  
WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia

Congressional township: 31-N Range: 9-E Number of section: 14  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: 1/4 east of Columbia City on Rader Rd. Not in 21-22

Name of owner: Ralph Wood Jr. Address: R#9, Columbia City, Ind.

Name of Well Drilling Contractor: Hollenbaugh & Schneider

Address: R#2, Columbia City, Ind.

Name of Drilling Equipment Operator: Hollenbaugh & Schneider

INFORMATION ON THE WELL

Completed depth of well: 144 ft. Date well was completed: Dec. 12, 1970

Diameter of outside casing or drive pipe: 4" inch Length: 141

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: \_\_\_\_\_

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 52 ft.

Bailer Test: Hours tested 1 Rate 20 g.p.m. Drawdown 3 f. (Difference between static level and water

Pumping Test: Hours tested 1 Rate 20 g.p.m. Drawdown 3 ft. level at end of test)

Signature Max Hollenbaugh

Date Dec. 12, 1970

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

50

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: Columbia Freight Lines dock just off St. Rd nine  
South of Columbia City

Name of owner: Bob Wein Address: R# 2 City

Name of Well Drilling Contractor: M. C. Whelan & Sons

Address: R # 6 City

Name of Drilling Equipment Operator: Paul Kule

INFORMATION ON THE WELL

Completed depth of well: 105 ft. Date well was completed: 11-3-59

Diameter of outside casing or drive pipe: 2" Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 3' Slot size: 50 gauge

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☐ For industry ☒ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 50 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
static level and water

Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Bill W. Whelan

Date 11-4-59

# WATER WELL LOG

[illegible]

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Act of 1949, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

5

DIVISION OF WATER  
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA  
STATE OFFICE BUILDING  
INDIANAPOLIS, INDIANA 46209

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 1st place South of Columbia

City Freight Lines on St. Rd. 9.

Name of owner: Jay Crawford Address: RR # 5 Columbia City, Ind.

Name of Well Drilling Contractor: M. C. Wheeler & Son's Inc.

Address: R. 6 Col. City, Indiana

Name of Drilling Equipment Operator: Jerry Lerman

INFORMATION ON THE WELL

Completed depth of well: 96 ft. Date well was completed: 10-11-68

Diameter of outside casing or drive pipe: 2 Length: 96

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 50 gauge Length: \_\_\_\_\_ Slot size: 50 Gauge

Type of Well: Drilled ☐ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) 60 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate 2 g.p.m. Drawdown 2 ft. (Difference between  
static level and water

Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Harold Wheeler

Date 8-13-69

[illegible]

$\frac{861}{781}$

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Warrick Civil Township: Columbia  
Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)  
Describe in your own words the well location with respect to nearby towns, roads, streets  
or distinctive landmarks: 1 mile South of Columbia City  
and 1/2 mile West

Name of owner: Columbia High School Address: \_\_\_\_\_  
Name of Well Drilling Contractor: J.P. Johnson & Son, Inc.  
Address: Highway Route #6 Columbia City, Indiana  
Name of Drilling Equipment Operator: Thomas Johnson

INFORMATION ON THE WELL

Completed depth of well: 104 ft. Date well was completed: August 20, 1961  
Diameter of outside casing or drive pipe: 6" Length: \_\_\_\_\_  
Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_  
Diameter of Screen: \_\_\_\_\_ Length: 6 ft. Slot size: 25  
Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_  
Use of Well: For home ☐ For industry ☐ For public supply ☒ Stock ☐  
Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐  
Static water level in completed well (Distance from ground to water level) \_\_\_\_\_ ft.  
Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between  
Pumping Test: Hours tested \_\_\_\_\_ Rate 125 g.p.m. Drawdown 2 ft. static level and water  
level at end of test)

Signature Marjorie E. Lewis  
Date 9/5/61

# WATER WELL LOG

FORMATIONS (Color, type of material, hardness, etc.)

From

To

Missouri Clay  
Blue Clay  
Gravel 69'

0 30  
30 35  
35 104

COUNTY: Madison TWP. 3rd RGE. 9E Sec 4 SEC. 14  
Topo. Map: Madison Loc. accepted w/o verification Yes    No     
El. of grnd. surface at well: 832 Courthouse Loc. By    Date     
Depth to bedrock:    Field Located By    Date     
Well log processed by:    Placed in Master Well Log File Date   

FOR ADMINISTRATIVE USE ONLY  
(Well Driller does not fill out)

100-976-  
100-10652

REMARKS:

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

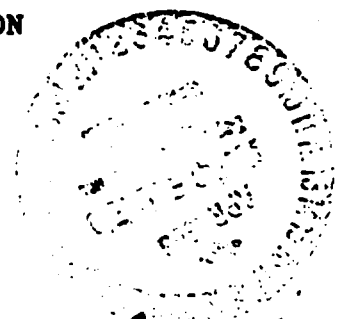
An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana Department of Conservation, 311 West Washington Street, Indianapolis, Indiana.

832  
35  
797

done

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
311 WEST WASHINGTON STREET  
INDIANAPOLIS, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Wabash Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets or distinctive landmarks: South of Columbia City on St Rd 205 Past Cemetery to first South Rd, to left, and then first Rd to left.

Name of owner: Columbia City School Address: Columbia City, Indiana

Name of Well Drilling Contractor: M. E. Schuler & Sons, Inc.

Address: State Route #6 Columbia City, Indiana

Name of Drilling Equipment Operator: James A. Schuler

INFORMATION ON THE WELL

Completed depth of well: 104 ft. Date well was completed: September 20, 1961

Diameter of outside casing or drive pipe: 6" Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: 6" Length: 6 feet Slot size: 25

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☐ For industry ☐ For public supply ☒ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 44 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between static level and water level at end of test)

Pumping Test: Hours tested \_\_\_\_\_ Rate 175 g.p.m. Drawdown 2 ft. (Difference between static level and water level at end of test)

Signature Nancy Elkins

Date 9-22-61

# WATER WELL LOG

FOR SULLIVAN COUNTY, INDIANA  
(Well Driller does not fill out)

COUNTY: Warrick TWP. 317 RGE. 7E 1 SEC. 14

Topo. Map: Indianapolis City Loc. accepted w/o verification Yes No   

El. of grnd. surface at well: 840 Courthouse Loc. By    Date   

Depth to bedrock: 704 Field Located By    Date   

Well log processed by: Field 4/4/5 Placed in Master Well Log File Date   

Water Location

From To

FORMATIONS (Color, type of material, hardness, etc.)

Yellow Clay  
Blue Clay  
Gravel

0 20  
20 35  
35 154

64

REMARKS:

## INSTRUCTIONS

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS 9, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: \_\_\_\_\_ Civil Township: \_\_\_\_\_

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: St. Rd 9 So of Col. City 1/4 mi  
New Addition

Name of owner: Randy Walker Address: \_\_\_\_\_

Name of Well Drilling Contractor: MC Whulver & Sons Inc

Address: R6 Columbia City

Name of Drilling Equipment Operator: Jr. Penn

INFORMATION ON THE WELL

Completed depth of well: 98 ft. Date well was completed: \_\_\_\_\_

Diameter of outside casing or drive pipe: 2 Length: \_\_\_\_\_

Diameter of inside casing or liner: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of Screen: \_\_\_\_\_ Length: \_\_\_\_\_ Slot size: 50

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 45 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between static level and water

Pumping Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. level at end of test)

Signature Randy Walker

Date 5-13-63

[illegible]

This Water Well Record form is designed to record the most essential data concerning a water well. We request that you be as accurate as possible in recording this information as it may be of great assistance in the planning and development of new water supplies.

An accurate location of the well is equally as important as an accurate well log. Please include all information possible in the space provided for well location.

As specified in Chapter 6 of the Acts of 1959, a copy of this report must be submitted within thirty days after the completion of a well to the Division of Water Resources, Indiana

5

DIVISION OF WATER RESOURCES  
INDIANA DEPARTMENT OF CONSERVATION  
609 STATE OFFICE BUILDING  
INDIANAPOLIS 9, INDIANA



WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Whitley Civil Township: Columbia

Congressional township: \_\_\_\_\_ Range: \_\_\_\_\_ Number of section: \_\_\_\_\_  
(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets

or distinctive landmarks: South of Columbia City on road  
9 1/2 mile first farm on West side of road  
Bush Lane 1/4 mile

Name of owner: Floyd Ferguson Address: Rt # Columbia City

Name of Well Drilling Contractor: Alan Richards

Address: Rt # 3 Columbia City

Name of Drilling Equipment Operator: Alan Richards

INFORMATION ON THE WELL

Completed depth of well: 112 ft. Date well was completed: Sept 19-1963

Diameter of outside casing or drive pipe: \_\_\_\_\_ Length: \_\_\_\_\_

Diameter of inside casing or liner: 2" Length: \_\_\_\_\_

Diameter of Screen: 1" Length: 3' Slot size: 50

Type of Well: Drilled ☒ Gravel Pack ☐ Driven ☐ Other \_\_\_\_\_

Use of Well: For home ☒ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☒ Driven ☐

Static water level in completed well (Distance from ground to water level) 48 ft.

Bailer Test: Hours tested \_\_\_\_\_ Rate \_\_\_\_\_ g.p.m. Drawdown \_\_\_\_\_ ft. (Difference between static level and water

Pumping Test: Hours tested 1 Rate 12 g.p.m. Drawdown 0 ft. level at end of test)

Signature Alan Richards

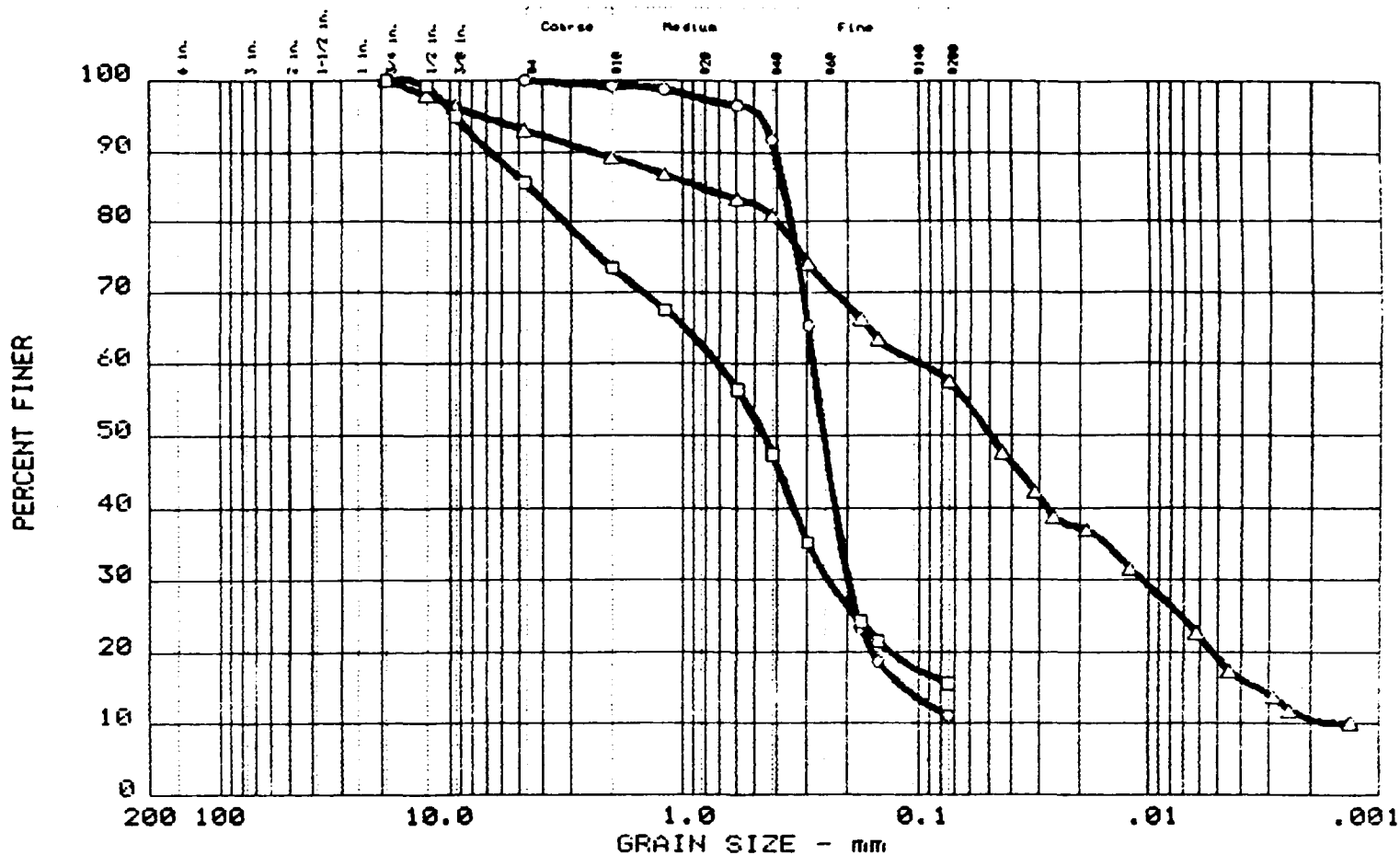
Date 9-19-63



**APPENDIX E**

**LABORATORY SOILS TEST RESULTS**

# GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	88.9	11.1	
△	0.0	6.9	35.6	38.6	18.9
□	0.0	14.4	70.0	15.7	

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○	--	--	0.37	0.28	0.25	0.200	0.1151	0.0600	2.37	4.7
△	15	3	0.84	0.10	0.05	0.011	0.0033			
□	--	--	4.52	0.71	0.46	0.242	0.0620	0.0300	2.76	23.6

MATERIAL DESCRIPTION	USCS
○ Brown Fine-Medium SAND, Little Silt & Clay	SP-SM
△ Brown Sandy SILT, Some Clay, Little Gravel	ML
□ Brown Fine-Coarse SAND, Some Gravel, Silt & Clay	SM

Project No.: 60128.04

Project: WAYNE RI/FS: COLUMBIA CITY, INDIANA

○ Sample: BORING: MW-1D SAMPLE: 2 @ 38.5-40 FT

△ Sample: BORING: MW-1D SAMPLE: 6 @ 58.5-60 FT

□ Sample: BORING: MW-1D SAMPLE: 10 @ 133.5-135 FT

Date: 10-20-88

Remarks:

TESTED BY DWA/VJR

ENTERED BY VJR

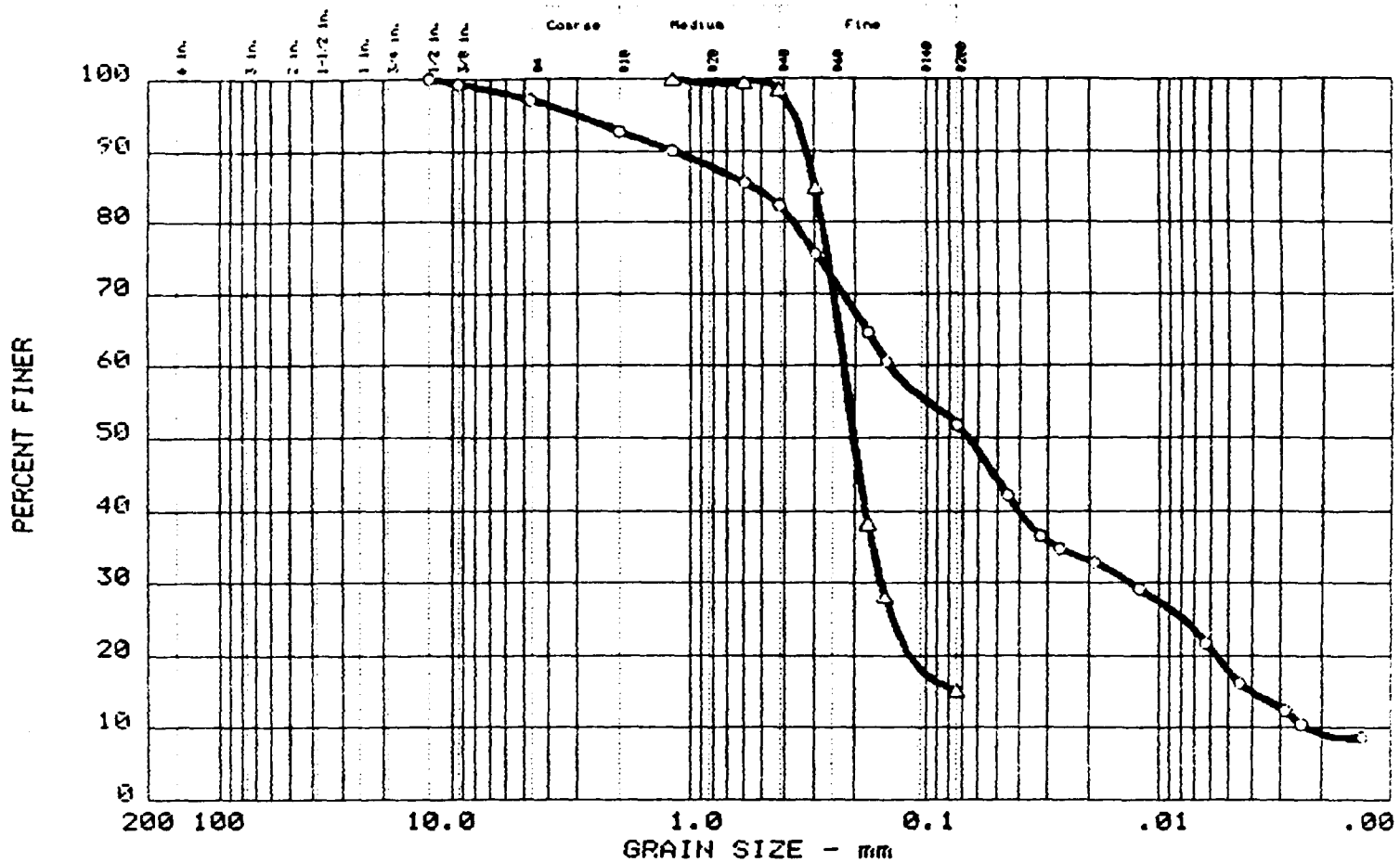
CHECKED BY *SA*

APPROVED BY *DWN*

GRAIN SIZE DISTRIBUTION TEST REPORT  
WARZYN ENGINEERING INC.

Sheet No.

# GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.8	45.3	34.1	17.7
△	0.0	0.0	84.8	15.2	

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○	13	2	0.54	0.14	0.07	0.013	0.0040	0.0023	0.54	63.1
△	--	--	0.30	0.23	0.20	0.155	0.0700	0.0300	3.55	7.5

## MATERIAL DESCRIPTION

○ Brown Sandy SILT, Some Clay, Trace Gravel  
 △ Brown Fine SAND, Some Silt & Clay

USCS

ML  
SM

Project No.: 60128.04

Project: WAYNE RI/FS : COLUMBIA CITY, INDIANA

○ Sample: BORING: MW-8D SAMPLE: 5 @ 58.5-60 FT

△ Sample: BORING: MW-8D SAMPLE: 18 148.5-150 FT

Date: 10-20-88

GRAIN SIZE DISTRIBUTION TEST REPORT  
 WARZYN ENGINEERING INC.

Remarks:

TESTED BY DWA/VJR

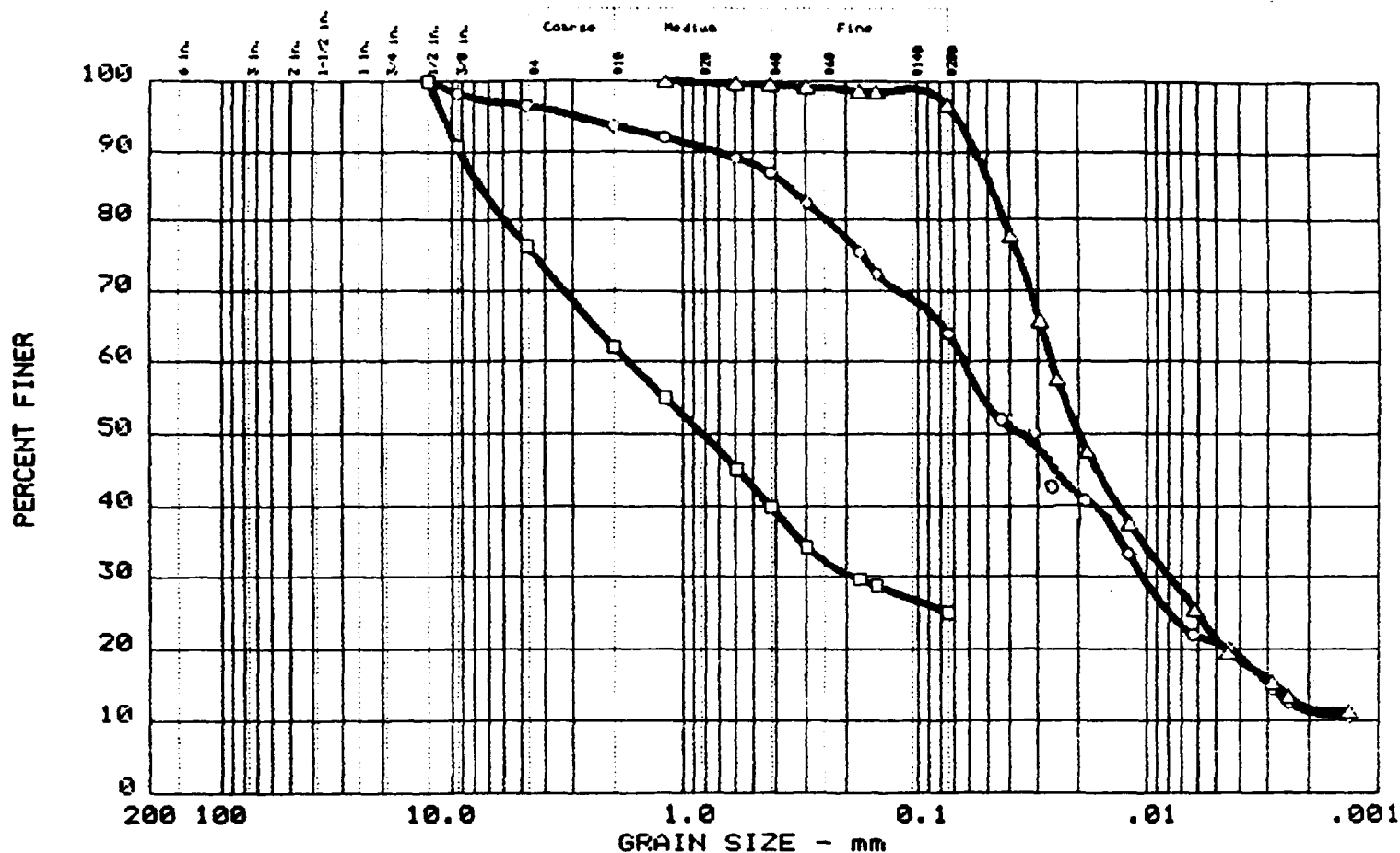
ENTERED BY VJR

CHECKED BY SA

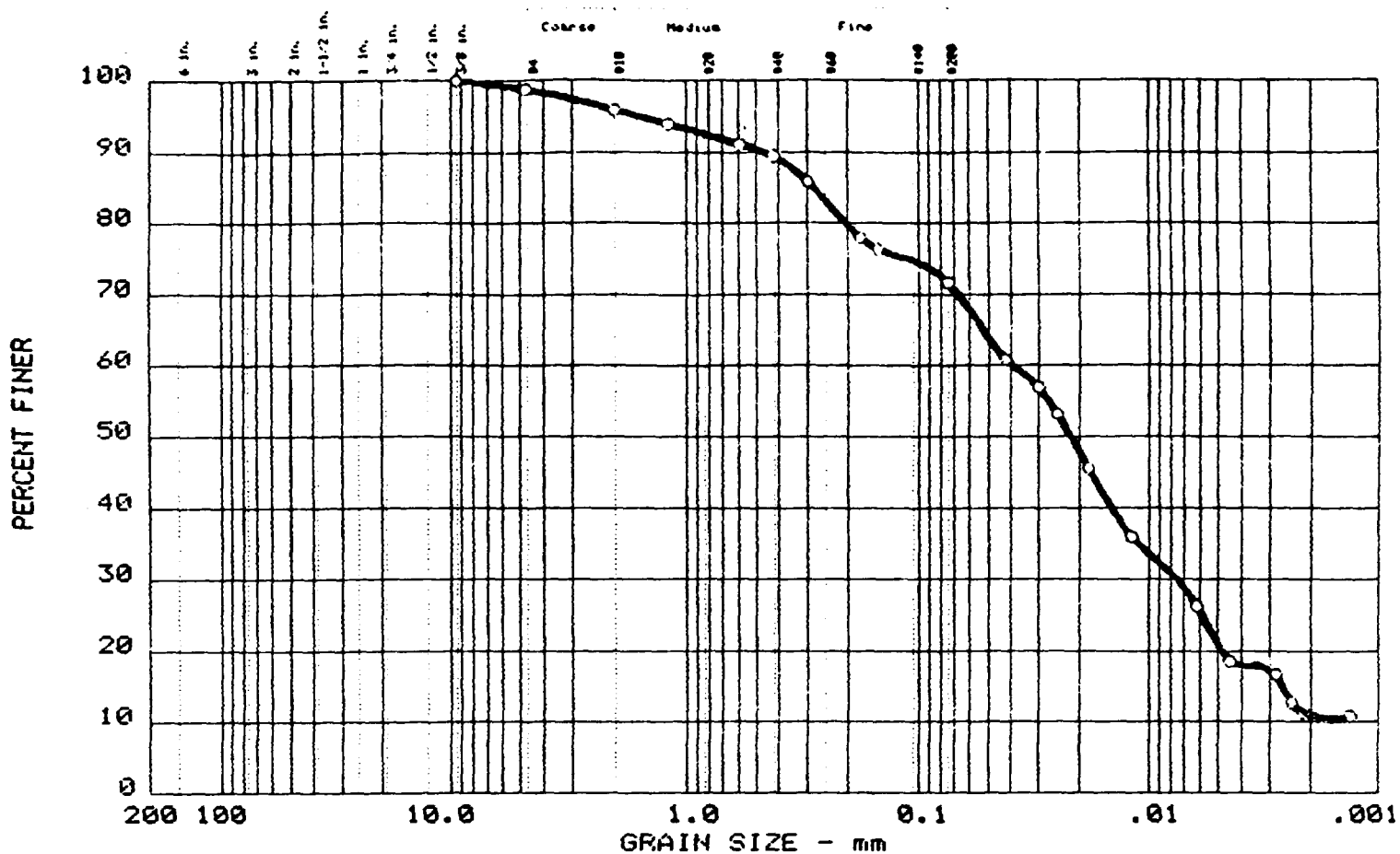
APPROVED BY DWN

Sheet No.

# GRAIN SIZE DISTRIBUTION TEST REPORT



# GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	1.3	27.1	50.9	20.7

	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
O	19	5	0.28		0.02	0.007	0.0026	0.0020	0.72	19.3

MATERIAL DESCRIPTION									USCS
O Brown Silty CLAY, Some Sand, Trace Gravel									CL-ML

Project No.: 60128.04

Project: WAYNE RI/FS: COLUMBIA CITY, INDIANA

Sample: BORING: SB-019 SAMPLE: 7 @ 18-20 FT

Date: 10-20-88

GRAIN SIZE DISTRIBUTION TEST REPORT  
WARZYN ENGINEERING INC.

Remarks:

TESTED BY DWA/VJR

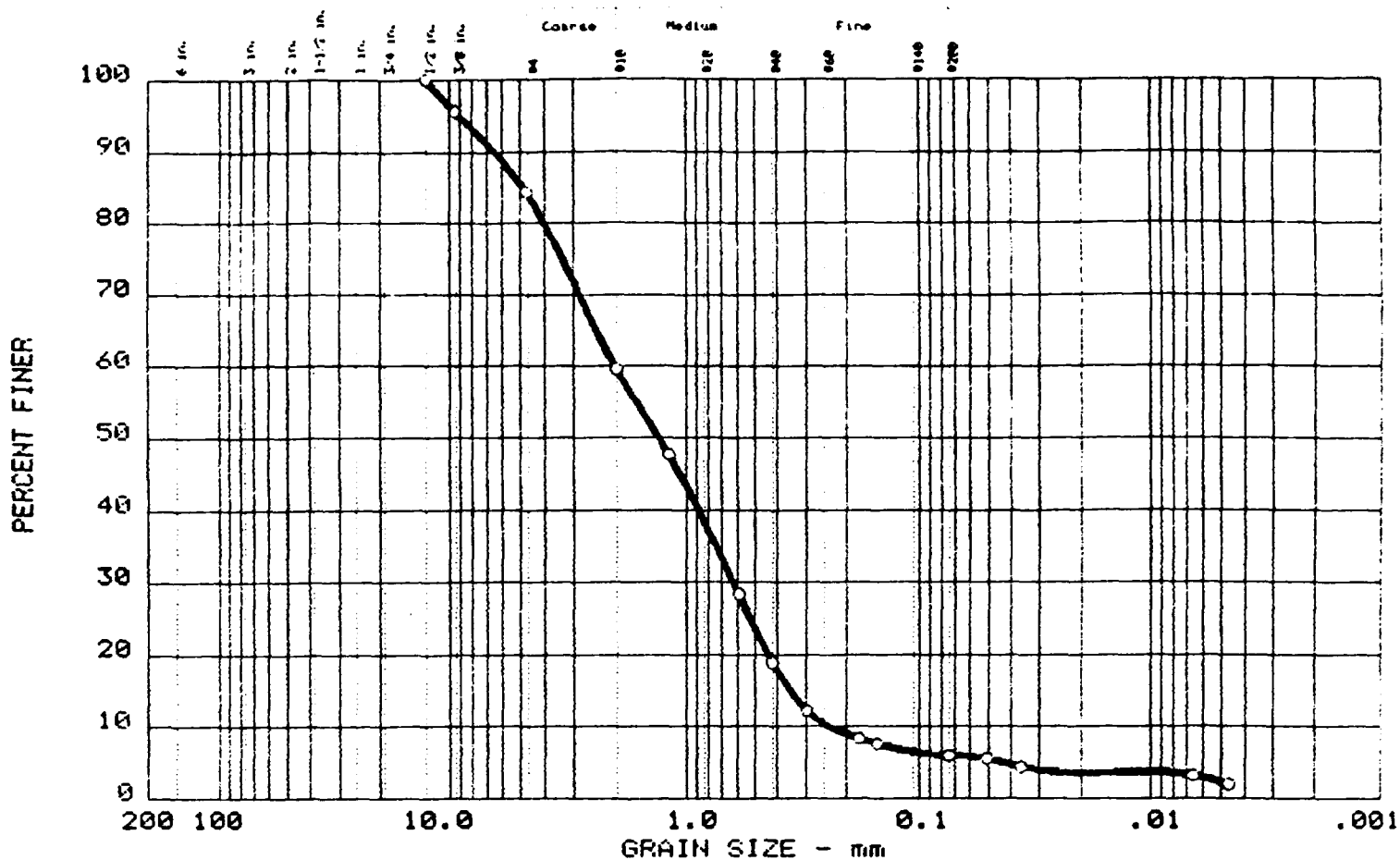
ENTERED BY VJR

CHECKED BY *DA*

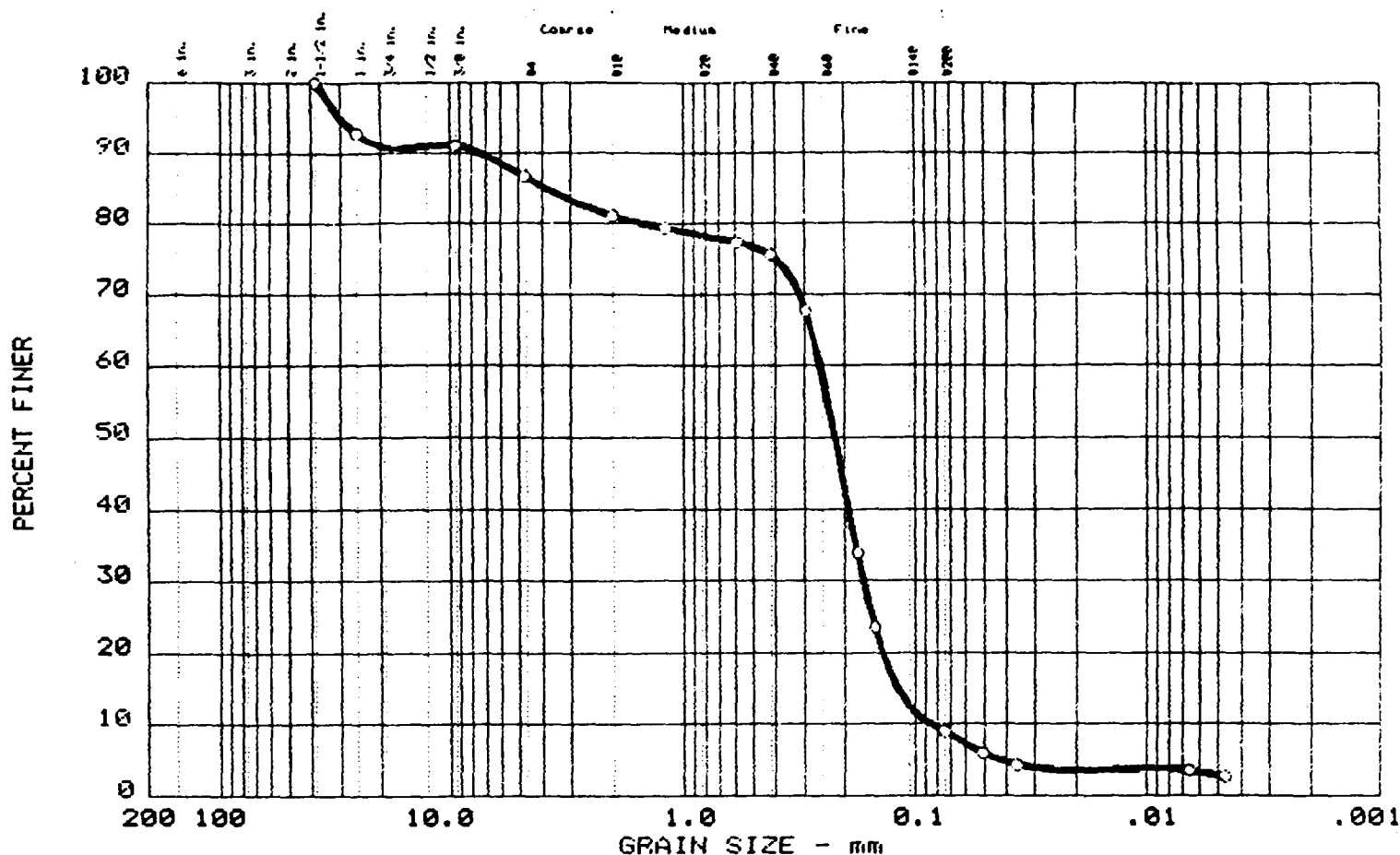
APPROVED BY *DZN*

Sheet No.

# GRAIN SIZE DISTRIBUTION TEST REPORT



# GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
0	0.0	13.4	77.7	6.1	2.9

LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
0	--	3.76	0.26	0.22	0.167	0.1191	0.0843	1.28	3.0

MATERIAL DESCRIPTION	USCS
0 Brown Fine-Coarse SAND, Some Gravel, Little Silt, Trace Clay	SP-SM

Project No.: 60128.04  
 Project: WAYNE RI/FS : COLUMBIA CITY, INDIANA  
 0 Sample: BORING: SB-025 SAMPLE: 8 @ 23-25 FT  
  
 Date: 10-20-88

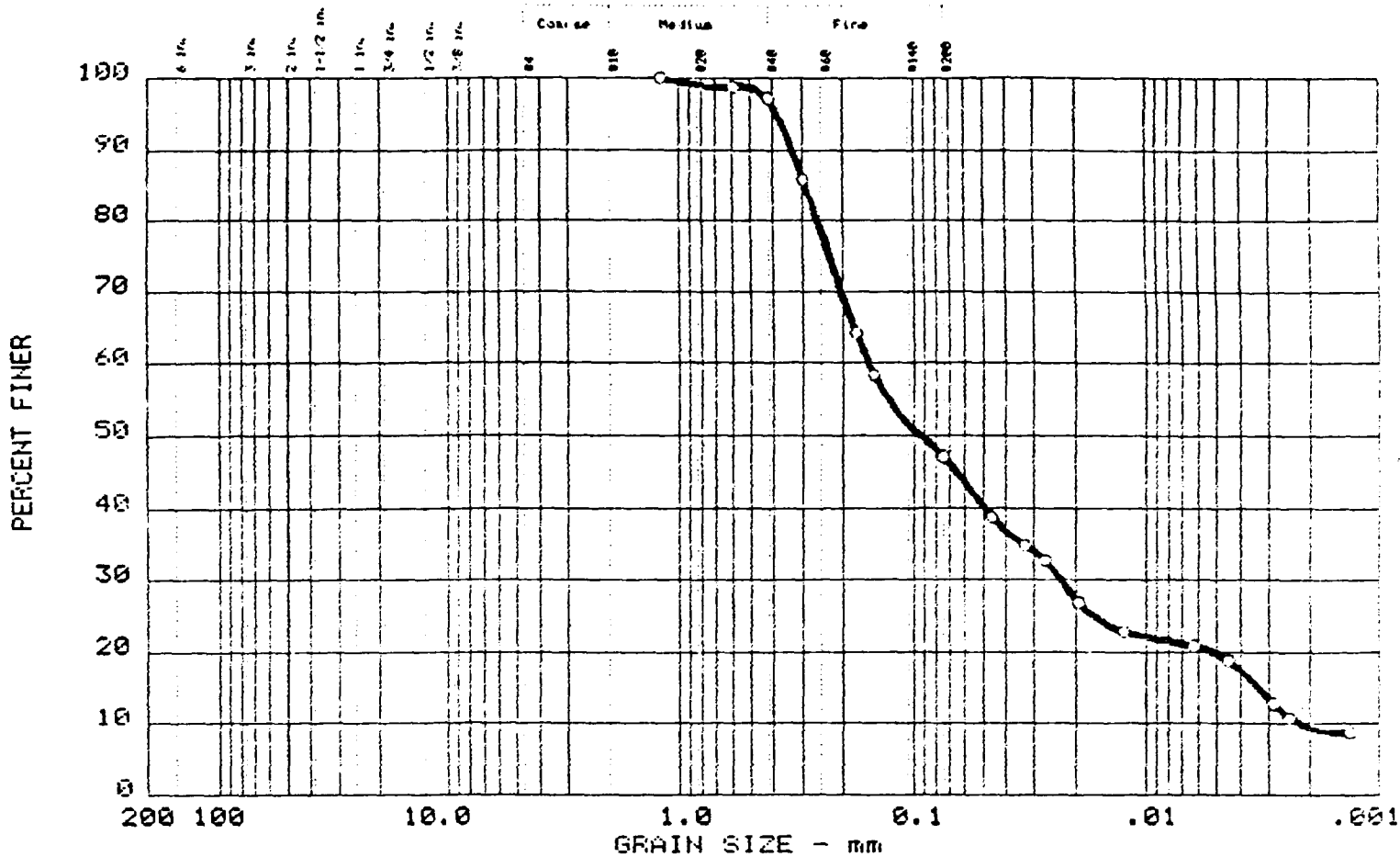
Remarks:  
 TESTED BY DWA/VJR  
 ENTERED BY VJR  
 CHECKED BY *DA*  
 APPROVED BY *DM*

GRAIN SIZE DISTRIBUTION TEST REPORT  
 WARZYN ENGINEERING INC.

Sheet No.



# GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+3"	% GRAVEL	% SAND	% SILT	% CLAY
0	0.0	0.0	52.9	27.4	19.7

	LL	PI	D85	D60	D50	D30	D15	D10	Cc	Cu
0	39	21	0.29	0.16	0.09	0.023	0.0033	0.0022	1.55	72.4

MATERIAL DESCRIPTION	USCS
0 Gray Clayey Fine SAND, Some Silt	SC

Project No.: 60128.04  
 Project: WAYNE RI/FS: COLUMBIA CITY, INDIANA  
 0 Sample: BORING: MW-3S SAMPLE: 2 @ 2.0-4.0 FT

Date: 10-20-89

GRAIN SIZE DISTRIBUTION TEST REPORT  
 WARZYN ENGINEERING INC.

Remarks:  
 TEST BY DWA/VJR/RNP  
 ENTERED BY VJR  
 CHECKED BY *DA*  
 APPROVED BY *Dm*

Sheet No.

**APPENDIX F**

**SURFACE WATER AND GROUNDWATER ELEVATION DATA**

APPENDIX F. SURFACE WATER AND GROUNDWATER ELEVATION DATA  
Wayne Reclamation and Recycling Site, Columbia City, Indiana

PAGE 1

Groundwater and Surface Water Elevations at WRR Site During 1988.

Level Location	Top of Inner Casing	03-May 1988	03-Aug 1988	08-Aug 1988	09-Aug 1988	10-Aug 1988	11-Aug 1988	13-Aug 1988	Pumping Test		AVERAGE	S.D.
									24-Aug 1988	25-Aug 1988		
MW-1D	841.73						822.46	813.80	811.73	816.39	816.10	4.03
MW-11	841.52		814.75	814.63	814.48	814.46	814.68	814.41	814.04	815.51	814.62	0.39
MW-1S	840.97	817.12	815.99	815.24	815.10	815.10	815.16	815.05	814.97	815.29	815.45	0.66
MW-2S	829.75	816.30	817.77	814.95	814.90	814.88	814.91	814.85	814.85	814.99	815.38	0.95
MW-3S	828.75	817.60	818.37	815.48	815.46	815.45	815.45	815.41	815.37	815.41	816.00	1.08
MW-4S	842.23	817.33	815.29	815.43	815.33	815.28	815.30	815.24	815.19	815.32	815.52	0.64
MW-5S	837.35	818.60	820.44	816.24	816.23		816.21	816.19	816.04	816.08	817.00	1.53
MW-6S	840.46	816.67	815.44	815.15	815.11		815.02	815.02	815.02	815.15	815.32	0.53
MW-7S	840.58	817.53	815.25	815.41	815.38	815.44	815.30	815.30	815.18	815.50	815.59	0.69
MW-8D	838.51								812.05	816.60	814.33	2.27
MW-8S	839.91	817.96	819.96	815.65	815.64	815.62	815.61	814.59	815.49	815.53	816.23	1.57
PH	831.03		815.32	812.58	814.64			814.79	812.12	816.65	814.35	1.56
MW-9S	829.92	817.97	819.95	815.69	815.69		815.66	815.65	815.53	815.56	816.46	1.53
MW-10S	827.43	817.28	814.74	815.28	815.24	815.22	815.23	815.18	815.20	815.35	815.41	0.68
MW-11S	829.49	816.19	814.83	814.70	814.62	814.76	814.70	814.57	814.41	815.09	814.87	0.50
MW-12S	827.18		815.06	814.96	814.94	814.90	814.94	814.87	814.94	814.96	814.95	0.05
MW-13D	830.49			814.76	813.36	814.50	813.19	813.79	812.44	815.59	813.95	0.99
MW-13S	831.18		816.27	814.70	814.66	814.72	814.66	814.63	814.63	814.85	814.89	0.53
MW-14S	825.76		815.52	814.85	814.82	814.83	814.83	814.81	814.81	814.86	814.92	0.23
P-1	838.64		815.41	815.39	815.32	815.39	815.39	815.45	815.29	815.36	815.38	0.05
P-2	829.91		815.60	815.26	815.51	815.43	815.43	816.38	815.36	815.38	815.54	0.33
P-3	827.98		815.00	815.49	815.49	815.43	815.48	815.40	815.36	815.42	815.38	0.15
P-4	827.13		814.18	815.55	815.54	815.55	815.52	815.49	815.43	815.48	815.34	0.44
83D (D)	829.61		815.12	814.86	814.74	814.63	814.70	814.65		814.84	814.79	0.16
83E (S)	829.70		817.12	814.53	814.54	814.56	814.51	814.53	814.41	815.21	814.93	0.86
83A (D)	828.88		810.55	810.90	810.96	811.02	811.07	811.17	811.68	811.68	811.13	0.36
83A (S)	828.85		815.46	815.01	814.97	814.95	814.98	814.90	814.90	815.04	815.03	0.17
83B	838.48		804.09	804.47	804.46		804.66	804.78			804.49	0.23
SG-1	837.17	816.92			816.62		816.43	816.67			816.66	0.20
SG-2												
SG-3 (bend)	818.29			814.64	814.70	814.66	814.66	814.64	814.35	814.36	814.57	0.14
SG-4												
SG-5	834.54	815.49			815.43		815.46	815.36			815.46	0.03
SG-6 (fwp)	819.34	818.14		815.52	815.50	815.48	815.47	815.43	815.42	815.42	815.80	0.89
SG-7	820.21	820.21									820.21	0.00
SG-8	840.94	837.96		837.71	837.68	837.64	837.61	837.52			837.69	0.14
SG-9 (MW9)	819.48								814.16	814.16	814.16	
SG-10(MW12)	818.18								814.46	814.47	814.47	0.01

**PAGE 2**

		Monitoring Wells										
DATE	TIME	MW-1D	MW-1I	MW-1S	MW-2S	MW-3S	MW-4S	MW-5S	MW-6S	MW-7S	MW-8D	MW-8S
24-Aug	10:00 AM					815.45		816.10				
24-Aug	10:15 AM	816.19	815.41	815.26	815.04		815.31			815.47	816.36	815.52
24-Aug	10:30 AM								810.20			
24-Aug	12:15 PM	816.39	815.51	815.29		815.41	815.32	816.08		815.50		
24-Aug	12:30 PM				814.99				810.24		816.57	815.53
24-Aug	12:45 PM										816.60	815.53
24-Aug	01:00 PM					815.53						
START PUMPING TEST												
24-Aug	01:15 PM					815.54		816.10	810.24			
24-Aug	01:30 PM	814.99	815.34	815.30							816.21	815.53
24-Aug	01:45 PM				814.98		815.34			815.52		
24-Aug	02:00 PM											
24-Aug	02:15 PM							816.12				
24-Aug	02:30 PM	813.34	814.84	815.24		815.52						
24-Aug	02:45 PM				814.97				810.22	815.48	814.51	815.51
24-Aug	03:00 PM						815.33					
24-Aug	04:00 PM											
24-Aug	04:15 PM	812.39	814.41	815.63		815.50	815.30	816.08				
24-Aug	04:30 PM				814.93		815.28		810.17	815.39	813.06	815.51
24-Aug	05:45 PM							816.07				
24-Aug	06:00 PM	812.03	814.23	815.06		815.49	815.27					
24-Aug	06:15 PM				814.90				810.12	815.28	812.50	815.53
24-Aug	08:00 PM											
24-Aug	08:15 PM							816.04				
24-Aug	08:30 PM	811.73	814.04	814.97		815.37	815.19			815.19		
24-Aug	08:45 PM					815.34				815.18	812.05	815.49
24-Aug	09:00 PM				814.85				810.04			
24-Aug	09:15 PM											
STOP PUMP												
24-Aug	09:45 PM								810.03			
24-Aug	10:15 PM	814.58	814.61	814.99								
24-Aug	10:30 PM				814.85							
24-Aug	10:45 PM							816.06				
24-Aug	11:00 PM						815.15			815.22	815.03	815.45
25-Aug	12:15 AM											
25-Aug	12:45 AM		815.14							815.30		
25-Aug	01:00 AM	815.79		815.11			815.17					
25-Aug	01:15 AM											
25-Aug	01:30 AM				814.87							
25-Aug	01:45 AM					815.33						
25-Aug	02:00 AM							816.07	810.05		816.09	815.49
25-Aug	03:45 AM	816.19	815.34	815.26			815.22			815.38		
25-Aug	04:00 AM					815.32						
25-Aug	04:15 AM				814.85							
25-Aug	04:30 AM							816.08			816.39	815.50
25-Aug	05:00 AM								810.10			
25-Aug	07:30 AM	816.40	815.47	815.23	814.93		815.26					

**PAGE 3**

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**PAGE 4**

	DATE	TIME	P-4	83D(dp)	83E(sh)	83A(sh)	83A(dp)
<hr/>							
	24-Aug	10:00 AM					
	24-Aug	10:15 AM	815.48	814.82	815.17	815.02	811.67
	24-Aug	10:30 AM					
	24-Aug	12:15 PM					
	24-Aug	12:30 PM	815.48	814.84	815.21	815.04	811.68
	24-Aug	12:45 PM					
	24-Aug	01:00 PM					
	START PUMPING TEST						
	24-Aug	01:15 PM					
	24-Aug	01:30 PM	815.46	814.85	815.18	815.04	
	24-Aug	01:45 PM					811.68
	24-Aug	02:00 PM					
	24-Aug	02:15 PM					
	24-Aug	02:30 PM	815.47		814.83		
	24-Aug	02:45 PM		814.86		815.01	811.68
	24-Aug	03:00 PM					
	24-Aug	04:00 PM					
	24-Aug	04:15 PM		814.89	814.57		
	24-Aug	04:30 PM	815.47			814.97	811.68
	24-Aug	05:45 PM					
	24-Aug	06:00 PM	815.47		814.47		
	24-Aug	06:15 PM		814.78		814.93	811.68
	24-Aug	08:00 PM					
	24-Aug	08:15 PM					
	24-Aug	08:30 PM	815.43				
	24-Aug	08:45 PM			814.41	814.90	811.68
	24-Aug	09:00 PM					
	24-Aug	09:15 PM					
	STOP PUMP						
	24-Aug	09:45 PM					
	24-Aug	10:15 PM				814.88	
	24-Aug	10:30 PM					811.68
	24-Aug	10:45 PM					
	24-Aug	11:00 PM	815.44				
	25-Aug	12:15 AM					
	25-Aug	12:45 AM					
	25-Aug	01:00 AM					
	25-Aug	01:15 AM		814.86			
	25-Aug	01:30 AM			814.62	814.87	811.63
	25-Aug	01:45 AM					
	25-Aug	02:00 AM	815.43				
	25-Aug	03:45 AM					
	25-Aug	04:00 AM		814.95	814.67		
	25-Aug	04:15 AM				814.90	811.63
	25-Aug	04:30 AM	815.46				
	25-Aug	05:00 AM					
	25-Aug	07:30 AM					
	25-Aug	07:45 AM					
	25-Aug	08:00 AM	815.47				
	25-Aug	08:15 AM					
	END RECOVER PHASE						
	<hr/>						

APPENDIX G

SLUG TEST DATA

BAILDOWN TEST RESULTS FOR: MW-15  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	10.0
Aquifer Thickness (ft)(D)	27.0
Well Penetration (ft)(H)	9.0

CALCULATED PARAMETERS

L / rw	30.0
A	2.15
B	0.50
C	NA
ln ((D-h)/rw)	3.99
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.12
ln (Re / rw) Partially Penetrating(>6)	1.98
l/t * ln (Yo / Yt)	28.83

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	9.81E-02	1.41E+02	1.06E+03	4.98E-02
Hydraulic Conductivity Partial-P (>6)	9.16E-02	1.32E+02	9.86E+02	4.65E-02

	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	2.65E+00	3812.6	28514.8	4.10E-03
Transmissivity Partial-P (>6)	2.47E+00	3559.7	26623.9	3.83E-03

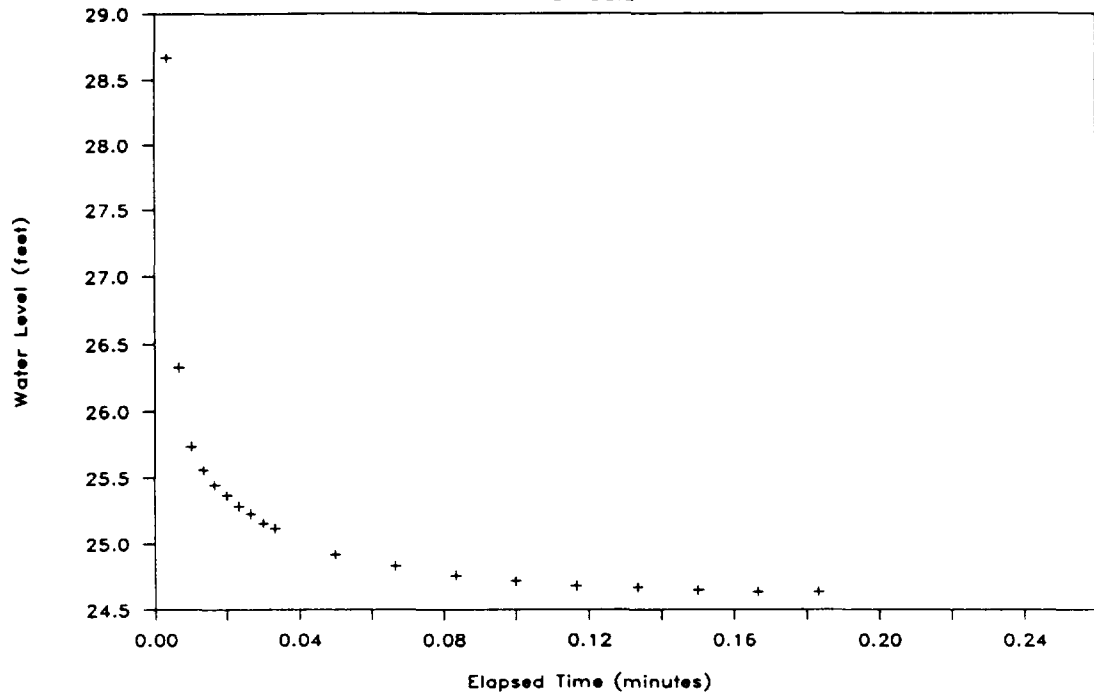
	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				0.262
Constant	0.262	0.003	28.67	4.03	0.167
Std Err of Y Est	0.070	0.007	26.33	1.69	0.072
R Squared	0.997	0.010	25.74	1.1	-0.023
No. of Observations	14	0.013	25.56	0.92	-0.121
Degrees of Freedom	12	0.017	25.45	0.91	-0.216
		0.02	25.37	0.73	-0.314
X Coefficient(s) -28.8311		0.02	25.29	0.65	-0.431
Std Err of Coef. 0.4689		0.03	25.23	0.59	-0.528
		0.03	25.16	0.52	-0.654
		0.03	25.12	0.49	-0.734
		0.05	24.92	0.28	-1.273
		0.07	24.83	0.19	-1.661
		0.08	24.76	0.12	-2.120
		0.10	24.72	0.08	-2.526
		0.12	24.68	0.04	-3.219
		0.13	24.67	0.03	-3.507
		0.15	24.65	0.01	-4.605
		0.17	24.64	0	-4.541
		0.18	24.64	0	-5.022
		0.20			-5.504
		0.22			-5.982
		0.23			-6.464
		0.25			-6.945
		0.27			-7.424
		0.28			-7.905
		0.30			-8.387
		0.32			-8.865
		0.33			-9.347
		0.42			-11.751
		0.50			-14.153
		0.58			-16.555
		0.67			-18.959
		0.75			
		0.83			
		0.92			
		1.00			

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MAXIMUM=	28.67
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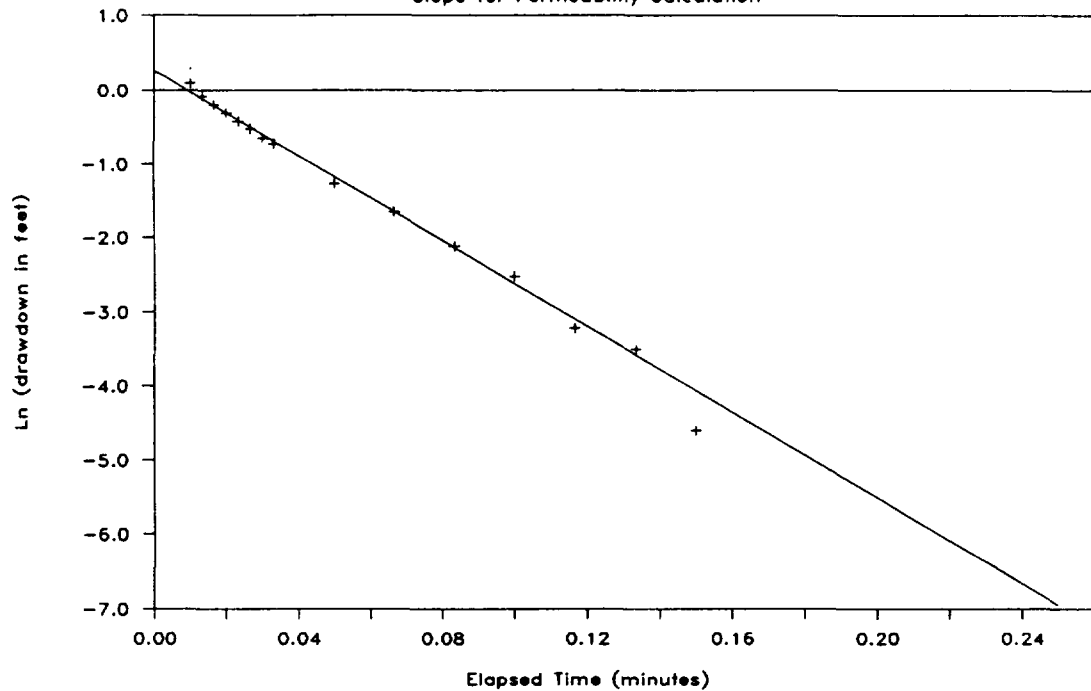
## Slug Test at MW-1s

Raw Data



## Slug Test at MW-1s

Slope for Permeability Calculation



BAILDOWN TEST RESULTS FOR: MW-25  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.2
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	8.0
Aquifer Thickness (ft)(D)	25.0
Well Penetration (ft)(H)	9.0

CALCULATED PARAMETERS

L / rw	24.0
A	2.1
B	0.4
C	NA
ln ((D-h)/rw)	3.97
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.06
ln (Re / rw) Partially Penetrating(>6)	1.92
1/t & ln (Yo / Yt)	32.39

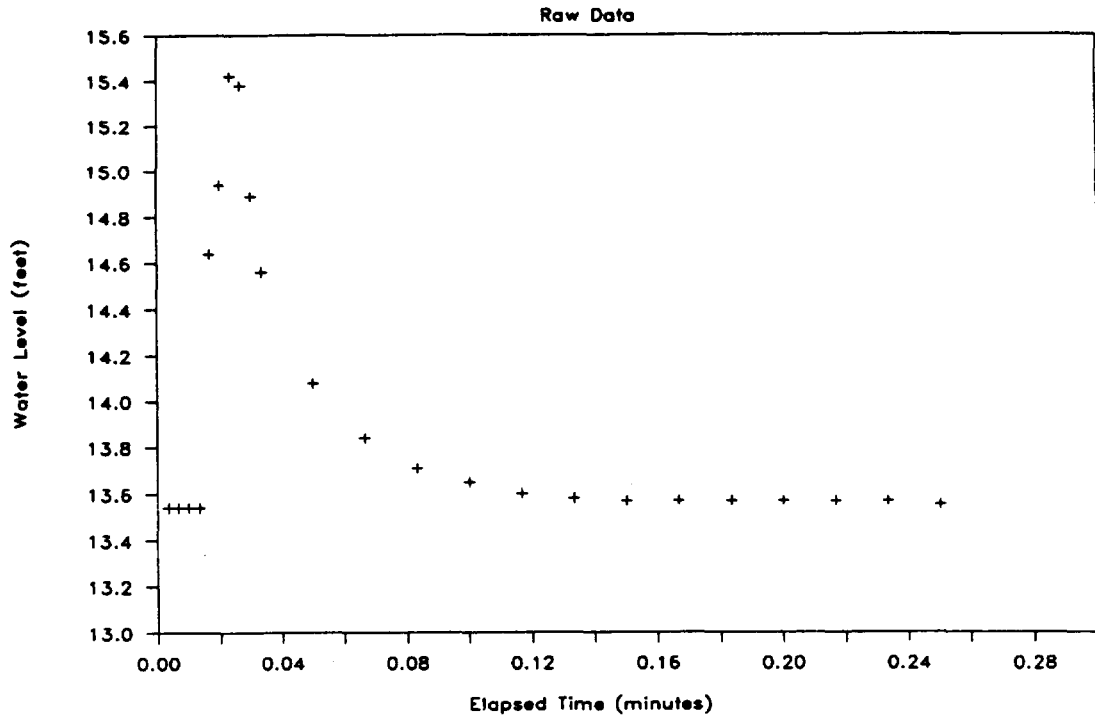
RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	1.34E-01	1.93E+02	1.44E+03	6.80E-02
Hydraulic Conductivity Partial-P (>6)	1.25E-01	1.80E+02	1.34E+03	6.33E-02

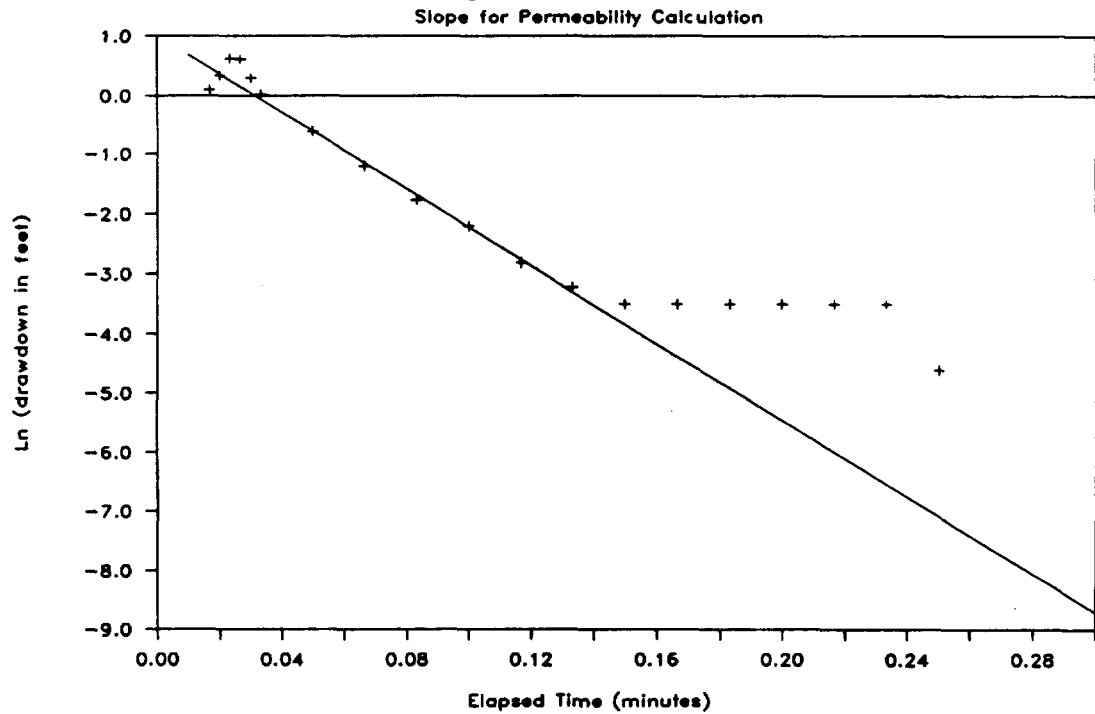
	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	3.34E+00	4816.0	36019.5	5.18E-03
Transmissivity Partial-P (>6)	3.12E+00	4488.2	33567.7	4.82E-03

	Time (min)	Depth to Water	Water Level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				1.011
Constant	1.011	0.003	13.54	0	0.984
Std Err of Y Est	0.076	0.007	13.54	0	0.797
R Squared	0.997	0.010	13.54	0	0.690
No. of Observations	7	0.013	13.54	0	0.580
Degrees of Freedom	5	0.017	14.64	1.1	0.473
	0.02	14.94	1.4	0.336	0.363
X Coefficient(s) -32.3908	0.02	15.42	1.88	0.631	0.256
Std Err of Coef. 0.8583	0.03	15.38	1.84	0.610	0.149
	0.03	14.89	1.35	0.300	0.039
	0.03	14.56	1.02	0.020	-0.060
	0.05	14.08	0.54	-0.616	-0.609
	0.07	13.84	0.3	-1.204	-1.146
	0.08	13.71	0.17	-1.772	-1.687
	0.10	13.65	0.11	-2.207	-2.228
	0.12	13.6	0.06	-2.813	-2.766
	0.13	13.58	0.04	-3.219	-3.307
	0.15	13.57	0.03	-3.507	-3.848
	0.17	13.57	0.03	-3.507	-4.386
	0.18	13.57	0.03	-3.507	-4.926
	0.20	13.57	0.03	-3.507	-5.467
	0.22	13.57	0.03	-3.507	-6.005
	0.23	13.57	0.03	-3.507	-6.546
	0.25	13.55	0.01	-4.605	-7.087
	0.27				-7.625
	0.28				-8.166
	0.30				-8.706
	0.32				-9.244
	0.33				-9.785
	0.42				-12.487
	0.50				-15.185
	0.58				-17.883
	0.67				-20.584
	0.75				
	0.83				
	0.92				
	1.00				
	=====				
MAXIMUM=		15.42			
MINIMUM=		13.54			

## Slug Test at MW-2s



## Slug Test at MW-2s



BAILDOWN TEST RESULTS FOR: MW-3S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	6.0
Aquifer Thickness (ft)(D)	6.0
Well Penetration (ft)(H)	5.5

CALCULATED PARAMETERS

L / rw	18.0
A	1.8
B	0.3
C	NA
ln ((D-h)/rw)	0.41
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.00
ln (Re / rw) Partially Penetrating(>6)	1.69
1/t * ln (Yo / Yt)	6.88

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	NA
Hydraulic Conductivity Partial-P	3.69E-02	5.31E+01	3.97E+02	1.87E-02
Hydraulic Conductivity Partial-P (>6)	3.11E-02	4.47E+01	3.35E+02	1.58E-02

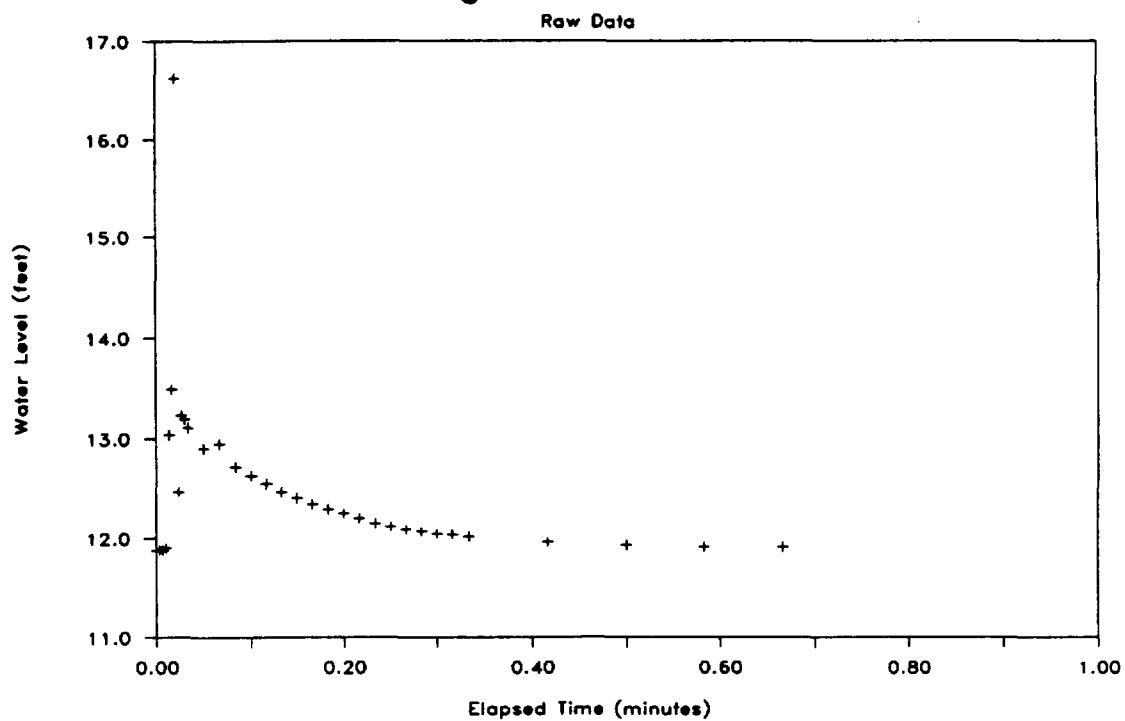
	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	2.21E-01	318.6	2382.6	3.42E-04
Transmissivity Partial-P (>6)	1.86E-01	268.4	2007.6	2.89E-04

	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0	11.88			0.370
Constant	0.370	0.003			0.347
Std Err of Y Est	0.071	0.007			0.324
R Squared	0.995	0.010	11.9	0.02	-3.912
No. of Observations	20	0.013	13.04	1.16	0.148
Degrees of Freedom	18	0.017	13.49	1.61	0.476
		0.020	16.63	4.75	1.558
		0.023	12.47	0.59	-0.528
		0.027	13.23	1.35	0.300
		0.030	13.19	1.31	0.270
		0.033	13.11	1.23	0.207
		0.050	12.9	1.02	0.020
		0.067	12.95	1.07	0.068
		0.083	12.72	0.84	-0.174
		0.10	12.63	0.75	-0.288
		0.12	12.55	0.67	-0.400
		0.13	12.47	0.59	-0.528
		0.15	12.41	0.53	-0.635
		0.17	12.34	0.46	-0.777
		0.18	12.29	0.41	-0.892
		0.20	12.25	0.37	-0.994
		0.22	12.2	0.32	-1.139
		0.23	12.15	0.27	-1.309
		0.25	12.12	0.24	-1.427
		0.27	12.09	0.21	-1.561
		0.28	12.07	0.19	-1.661
		0.30	12.05	0.17	-1.772
		0.32	12.04	0.16	-1.833
		0.33	12.02	0.14	-1.966
		0.42	11.96	0.08	-2.526
		0.50	11.93	0.05	-2.996
		0.58	11.91	0.03	-3.507
		0.67	11.91	0.03	-3.507
		0.75			
		0.83			
		0.92			
		1.00			

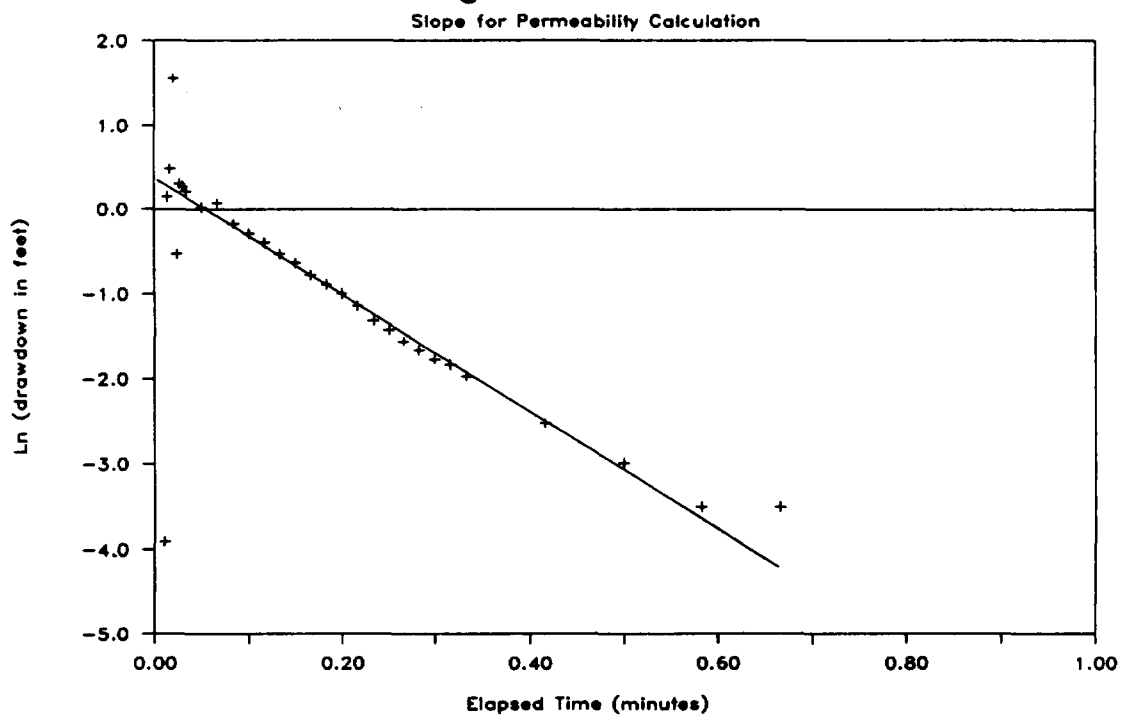
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MAXIMUM=	16.63
MINIMUM=	11.88

## Slug Test at MW-3s



## Slug Test at MW-3s



BAILDOWN TEST RESULTS FOR: MW-4S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	2.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	9.0
Aquifer Thickness (ft)(D)	27.0
Well Penetration (ft)(H)	9.0

CALCULATED PARAMETERS

L / rw	27.0
A	2.10
B	0.45
C	NA
ln ((D-h)/rw)	3.99
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.09
ln (Re / rw) Partially Penetrating(>b)	1.95
1/t * ln (Yc / Yt)	50.33

RESULTS

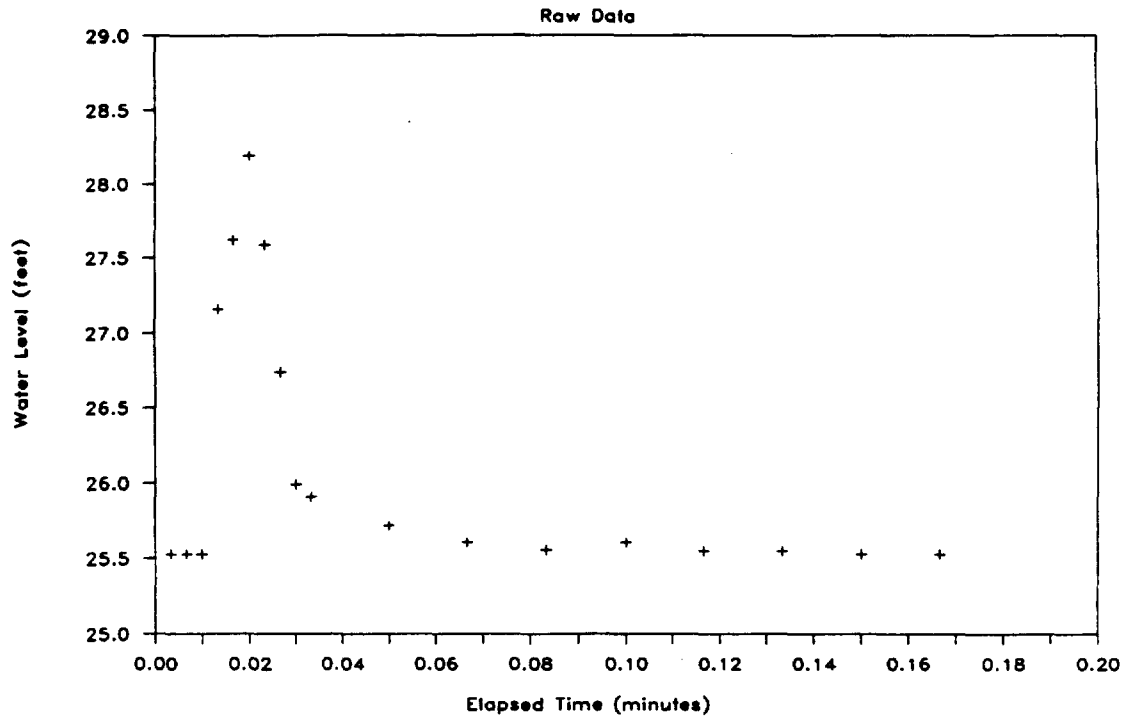
	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	1.88E-01	2.70E+02	2.02E+03	9.54E-02
Hydraulic Conductivity Partial-P (>b)	1.75E-01	2.53E+02	1.89E+03	8.91E-02

	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	5.07E+00	7300.4	54600.8	7.85E-03
Transmissivity Partial-P (>b)	4.74E+00	6822.0	51023.2	7.33E-03

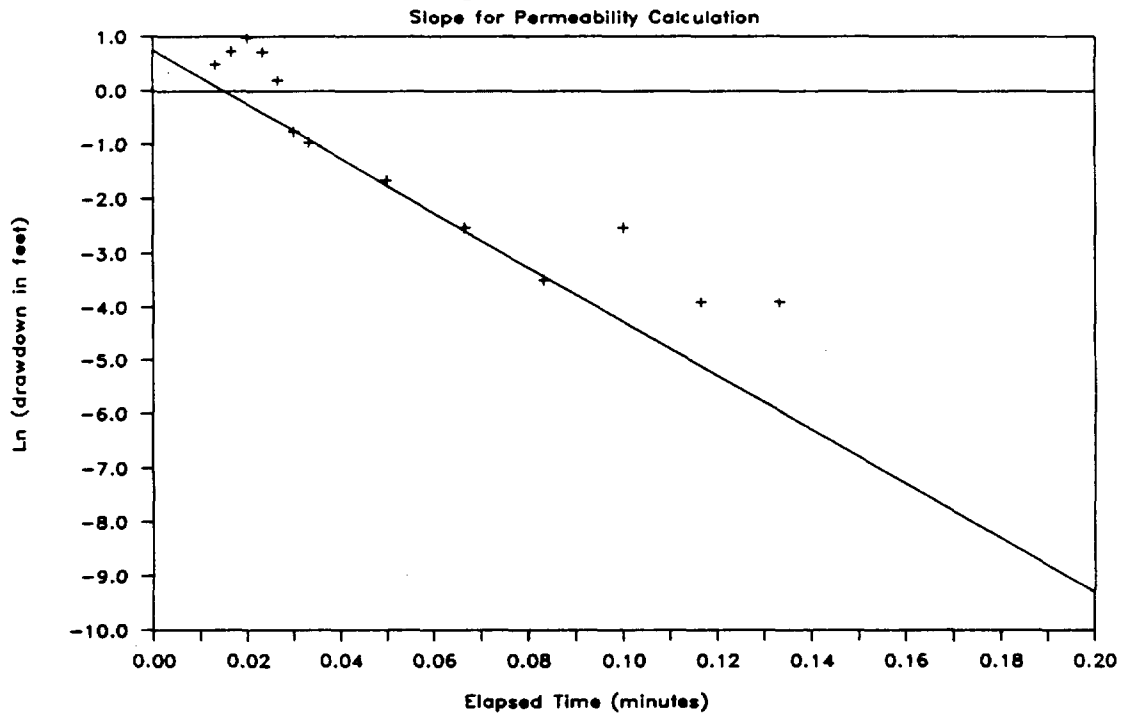
	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				0.762
Constant	0.762	0.003	25.53		0.596
Std Err of Y Est	0.086	0.007	25.53		0.430
R Squared	0.996	0.010	25.53		0.264
No. of Observations	5	0.013	27.16	1.63	0.489
Degrees of Freedom	3	0.017	27.62	2.09	0.737
		0.020	28.19	2.66	0.978
		0.023	27.59	2.06	0.723
		0.027	26.74	1.21	0.191
		0.030	25.99	0.46	-0.777
		0.033	25.91	0.38	-0.960
		0.050	25.72	0.19	-1.661
		0.067	25.61	0.08	-2.526
		0.083	25.56	0.03	-3.507
		0.10	25.61	0.08	-2.526
		0.12	25.55	0.02	-3.912
		0.13	25.55	0.02	-3.912
		0.15	25.53	0	
		0.17	25.53	0	
		0.18			
		0.20			
		0.22			
		0.23			
		0.25			
		0.27			
		0.28			
		0.30			
		0.32			
		0.33			
		0.42			
		0.50			
		0.58			
		0.67			
		0.75			
		0.83			
		0.92			
		1.00			

=====  
MAXIMUM= 28.19  
MINIMUM= 25.53

## Slug Test at MW-4s



## Slug Test at MW-4s



BAILDOWN TEST RESULTS FOR: MW-55  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	7.0
Aquifer Thickness (ft)(D)	25.0
Well Penetration (ft)(H)	7.5

CALCULATED PARAMETERS

L / rw	21.0
A	2.0
B	0.3
C	NA
ln ((D-h)/rw)	3.96
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	1.98
ln (Re / rw) Partially Penetrating(>6)	1.07
1/t & ln (Yc / Yt)	10.12

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	8.23E-02	1.18E+02	8.86E+02	4.19E-02
Hydraulic Conductivity Partial-P (>6)	7.78E-02	1.12E+02	8.38E+02	3.95E-02

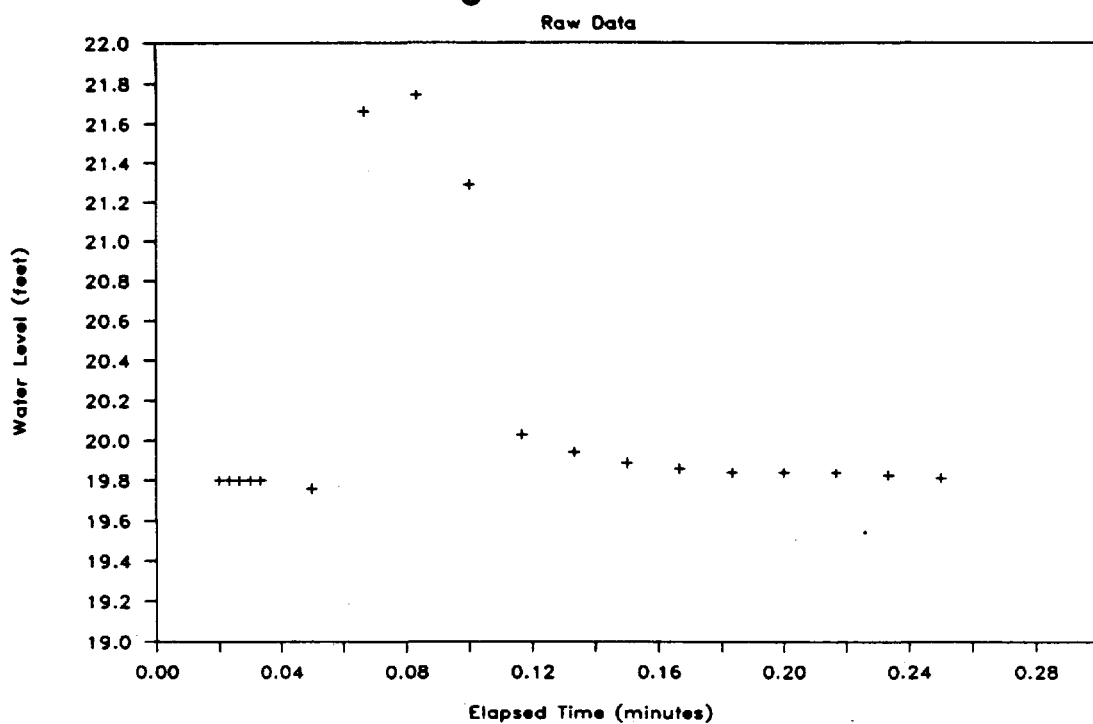
	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	2.06E+00	2961.3	22147.9	3.18E-03
Transmissivity Partial-P (>6)	1.94E+00	2799.8	20940.2	3.01E-03

	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				0.739
Constant	0.739	0.003			0.679
Std Err of Y Est	0.066	0.007			0.619
R Squared	0.986	0.010			0.560
No. of Observations	5	0.013			0.498
Degrees of Freedom	3	0.017			0.438
	0.020	19.0	0.04	-3.219	0.376
X Coefficient(s) -18.1211	0.023	19.0	0.04	-3.219	0.317
Std Err of Coef. 1.2539	0.027	19.0	0.04	-3.219	0.257
	0.030	19.0	0.04	-3.219	0.195
	0.033	19.0	0.04	-3.219	0.135
	0.050	19.76	0	ERR	-0.167
	0.067	21.66	1.9	0.642	-0.468
	0.083	21.74	1.98	0.683	-0.771
	0.10	21.29	1.53	0.425	-1.073
	0.12	20.03	0.27	-1.309	-1.374
	0.13	19.94	0.16	-1.715	-1.677
	0.15	19.89	0.13	-2.040	-1.979
	0.17	19.86	0.1	-2.303	-2.280
	0.18	19.84	0.08	-2.526	-2.583
	0.20	19.84	0.08	-2.526	-2.885
	0.22	19.84	0.08	-2.526	-3.186
	0.23	19.83	0.07	-2.659	-3.489
	0.25	19.81	0.05	-2.996	-3.791
	0.27				-4.092
	0.28				-4.395
	0.30				-4.697
	0.32				-4.998
	0.33				-5.301
	0.42				-6.012
	0.50				-6.322
	0.58				-9.831
	0.67				-11.342
	0.75				
	0.83				
	0.92				
	1.00				

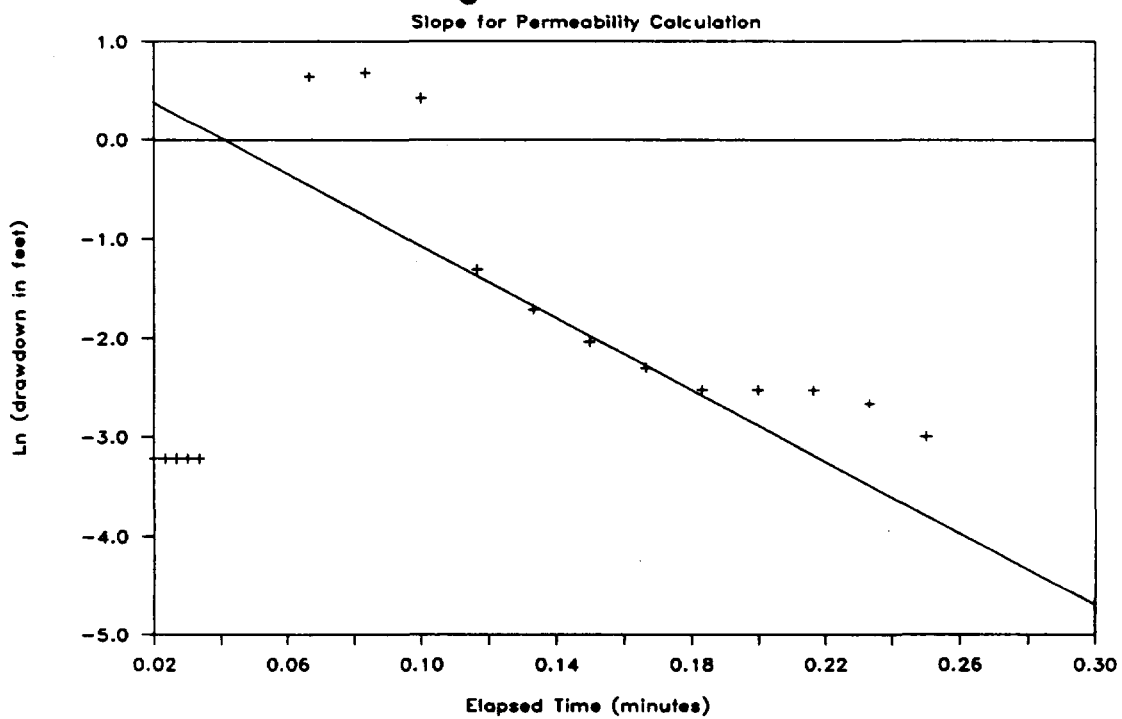
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MAXIMUM=	21.74
MINIMUM=	19.76

## Slug Test at MW-5s



## Slug Test at MW-5s



BAILDOWN TEST RESULTS FOR: MW-6S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	1.0
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	10.0
Aquifer Thickness (ft)(D)	25.0
Well Penetration (ft)(H)	13.0

CALCULATED PARAMETERS

L / rw	30.0
A	2.15
B	0.50
C	NA
ln ((D-h)/rw)	3.58
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.32
ln (Re / rw) Partially Penetrating(>6)	2.12
1/t * ln (Yo / Yt)	25.45

RESULTS	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	2.05E-02	2.95E+01	2.21E+02	1.04E-02
Hydraulic Conductivity Partial-P (>6)	1.87E-02	2.70E+01	2.02E+02	9.51E-03
	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	5.12E-01	737.0	5512.1	7.92E-04
Transmissivity Partial-P (>6)	4.68E-01	674.1	5041.7	7.25E-04

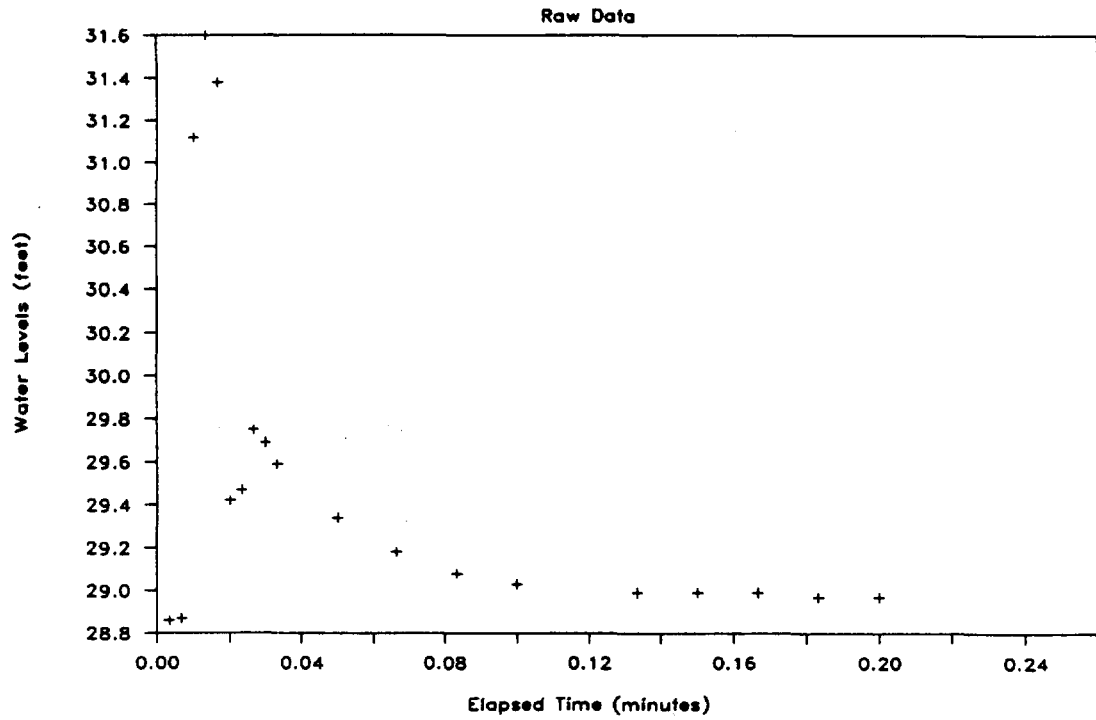
	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGRESSION LINE CALC.
Regression Output:	0.0				0.539
Constant	0.539	0.003	28.86		0.455
Std Err of Y Est	0.024	0.007	28.87		0.371
R Squared	0.999	0.010	31.12	2.25	0.811
No. of Observations	6	0.013	31.6	2.73	1.804
Degrees of Freedom	4	0.017	31.38	2.51	0.920
		0.02	29.42	0.55	-0.598
		0.02	29.47	0.6	-0.511
X Coefficient(s) -25.4498		0.03	29.75	2.88	-0.128
Std Err of Coef. 0.4699		0.03	29.69	0.82	-0.198
		0.03	29.59	0.72	-0.329
		0.05	29.34	0.47	-0.755
		0.07	29.18	0.31	-1.171
		0.08	29.08	0.21	-1.561
		0.10	29.03	0.16	-1.833
		0.13	28.99	0.12	-2.120
		0.15	28.99	0.12	-2.120
		0.17	28.99	0.12	-2.120
		0.18	28.97	0.1	-2.303
		0.20	28.97	0.1	-2.303
		0.22			-4.973
		0.23			-5.398
		0.25			-5.824
		0.27			-6.246
		0.28			-6.671
		0.30			-7.096
		0.32			-7.518
		0.33			-7.943
		0.42			-10.066
		0.50			-12.186
		0.58			-14.306
		0.67			-16.428
		0.75			
		0.83			
		0.92			
		1.00			

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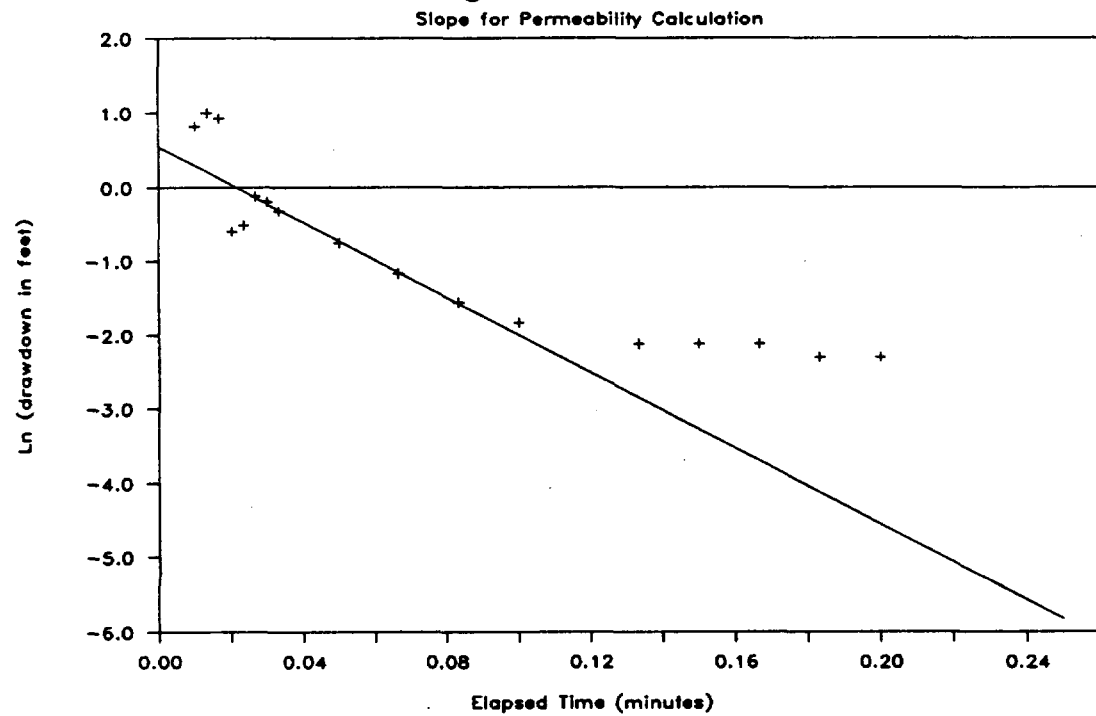
MAXIMUM= 31.6

MINIMUM= 28.87

## Slug Test at MW-6s



## Slug Test at MW-6s



BAILDOWN TEST RESULTS FOR: MW-7S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.8
Effective RADIUS (in)(rw)	4.8
Screen Length (ft)(L)	8.8
Aquifer Thickness (ft)(D)	27.8
Well Penetration (ft)(H)	8.8

CALCULATED PARAMETERS

L / rw	24.8
A	2.1
B	0.4
C	NA
ln ((D-h)/rw)	4.84
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.08
ln (Re / rw) Partially Penetrating(>6)	1.87
1/t & ln (Yo / Yt)	42.57

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	1.70E-01	2.45E+02	1.84E+03	8.66E-02
Hydraulic Conductivity Partial-P (>6)	1.68E-01	2.38E+02	1.72E+03	8.13E-02

	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	4.68E+00	6628.1	49572.7	7.13E-03
Transmissivity Partial-P (>6)	4.32E+00	6223.8	46542.7	6.69E-03

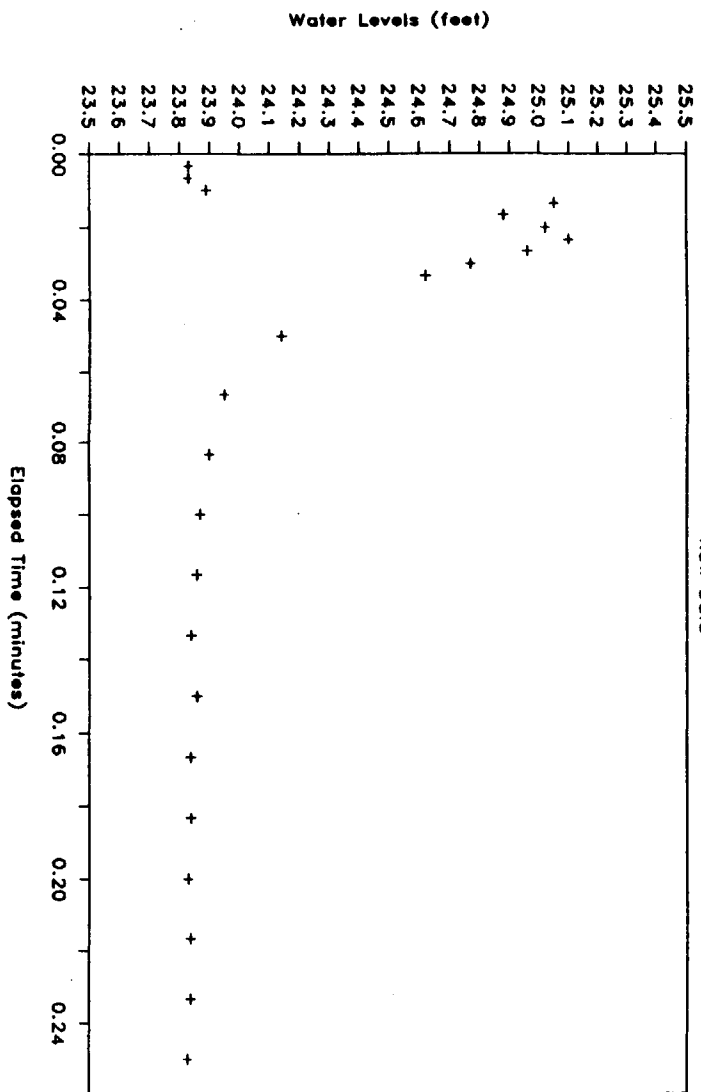
	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				1.086
Constant	1.086	0.003	23.83		0.946
Std Err of Y Est	0.236	0.007	23.83		0.885
R Squared	0.983	0.010	23.89	0.06	-2.813
No. of Observations	9	0.013	23.85	1.22	0.199
Degrees of Freedom	7	0.017	24.88	1.05	0.049
		0.02	25.02	1.19	0.174
X Coefficient(s)	-42.57	0.02	25.1	1.27	0.239
Std Err of Coef.	2.11	0.03	24.96	1.13	0.122
		0.03	24.77	0.94	-0.862
		0.03	24.62	0.79	-0.236
		0.05	24.14	0.31	-1.171
		0.07	23.95	0.12	-2.120
		0.08	23.9	0.07	-2.659
		0.10	23.87	0.04	-3.219
		0.12	23.86	0.03	-3.587
		0.13	23.84	0.01	-4.605
		0.15	23.86	0.03	-3.587
		0.17	23.84	0.01	-4.605
		0.18	23.84	0.01	-4.605
		0.20	23.83	0	
		0.22	23.84	0.01	-4.605
		0.23	23.84	0.01	-4.605
		0.25	23.83	0	
		0.27			
		0.28			
		0.30			
		0.32			
		0.33			
		0.42			
		0.50			
		0.58			
		0.67			
		0.75			
		0.83			
		0.92			
		1.00			

=====

MAXIMUM=	25.1
MINIMUM=	23.83

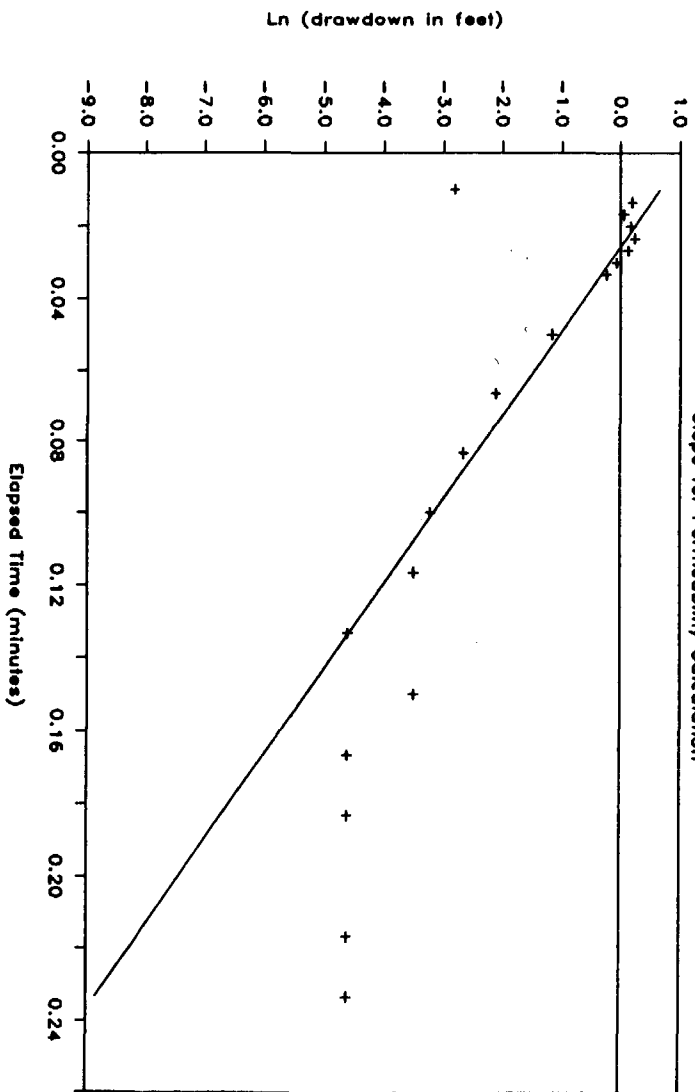
# Slug Test at MW-7s

Raw Data



# Slug Test at MW-7s

Slope for Permeability Calculation



BAILDOWN TEST RESULTS FOR: MW-8S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	7.0
Aquifer Thickness (ft)(D)	9.0
Well Penetration (ft)(H)	7.5

CALCULATED PARAMETERS

L / rw	21.0
A	2.0
B	0.3
C	NA
ln ((D-h)/rw)	1.50
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	2.13
ln (Re / rw) Partially Penetrating(>6)	1.87
1/t * ln (Yo / Yt)	49.88

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	2.43E-01	3.50E+02	2.62E+03	1.24E-01
Hydraulic Conductivity Partial-P (>6)	2.14E-01	3.08E+02	2.31E+03	1.09E-01

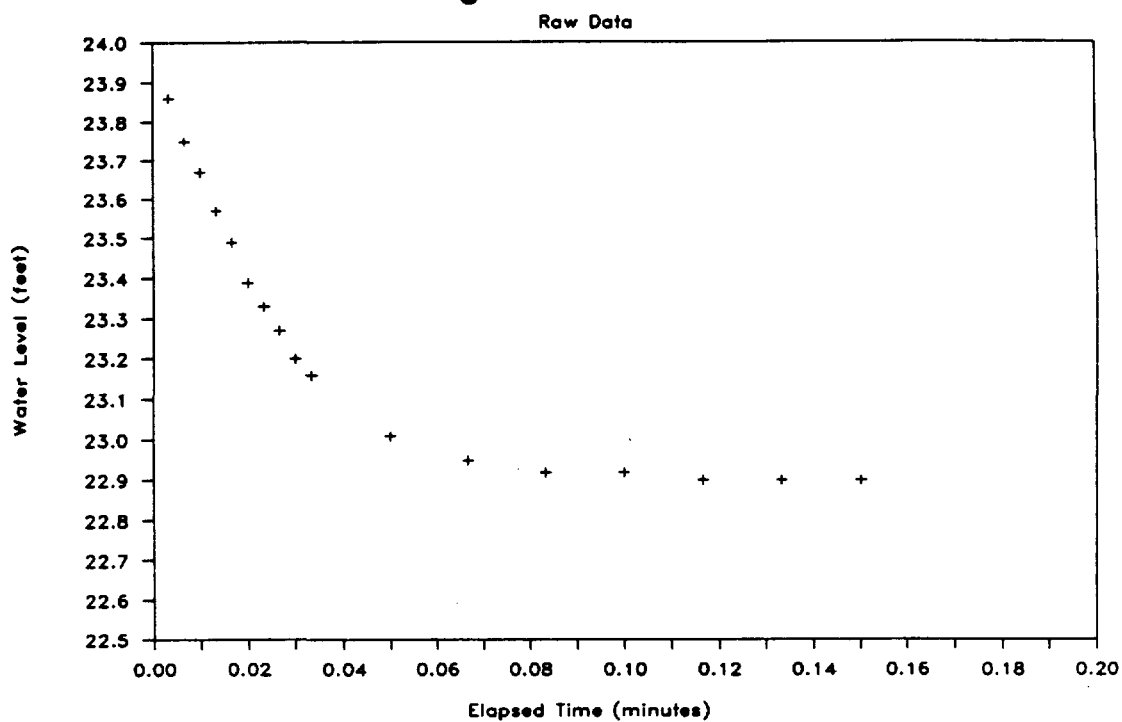
	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	2.19E+00	3153.4	23584.4	3.39E-03
Transmissivity Partial-P (>6)	1.93E+00	2774.3	20749.1	2.98E-03

	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0				0.298
Constant	0.298	23.86			0.126
Std Err of Y Est	0.035	23.75			-0.039
R Squared	0.999	23.67	0.77	-0.261	-0.204
No. of Observations	11	23.57	0.67	-0.400	-0.373
Degrees of Freedom	9	23.49	0.59	-0.520	-0.538
	0.02	23.39	0.49	-0.713	-0.707
X Coefficient(s)	-49.877	23.33	0.43	-0.844	-0.872
Std Err of Coef.	0.472	23.27	0.37	-0.994	-1.037
	0.03	23.2	0.3	-1.204	-1.206
	0.03	23.16	0.26	-1.347	-1.371
	0.05	23.01	0.11	-2.207	-2.204
	0.07	22.95	0.05	-2.996	-3.032
	0.08	22.92	0.02	-3.912	-3.865
	0.10	22.92	0.02	-3.912	-4.698
	0.12	22.9	0.02	-3.912	-5.525
	0.13	22.9	0.02	-3.912	-6.358
	0.15	22.9	0.02	-3.912	-7.191
	0.17				-8.019
	0.18				-8.852
	0.20				-9.685
	0.22				-10.513
	0.23				-11.346
	0.25				-12.179
	0.27				-13.007
	0.28				-13.840
	0.30				-14.673
	0.32				-15.501
	0.33				-16.334
	0.42				-20.494
	0.50				-24.648
	0.58				-28.803
	0.67				-32.963
	0.75				
	0.83				
	0.92				
	1.00				

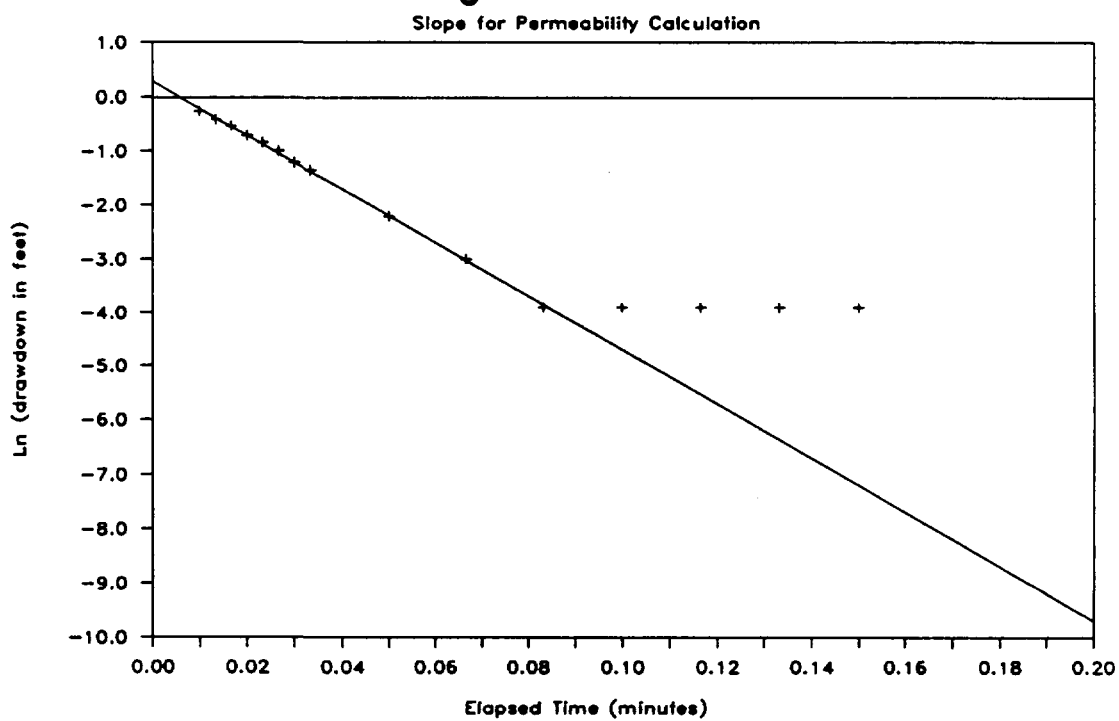
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MAXIMUM=	23.86
MINIMUM=	22.9

## Slug Test at MW-8s



## Slug Test at MW-8s



BAILDOWN TEST RESULTS FOR: MW-9S  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	6.0
Aquifer Thickness (ft)(D)	20.0
Well Penetration (ft)(H)	6.0

CALCULATED PARAMETERS

L / rw	18.0
A	1.8
B	0.3
C	NA
ln ((D-h)/rw)	2.48
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	1.94
ln (Re / rw) Partially Penetrating(>b)	1.77
1/t & ln (Yo / Yt)	139.62

RESULTS FT/MIN FT/DAY GPD/SQ.FT CM/SEC

Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	7.25E-01	1.04E+03	7.81E+03	3.68E-01
Hydraulic Conductivity Partial-P (>b)	6.62E-01	9.54E+02	7.13E+03	3.36E-01

SQ.M/MIN SQ.FT/DAY GPD/FT SQ.M/SEC

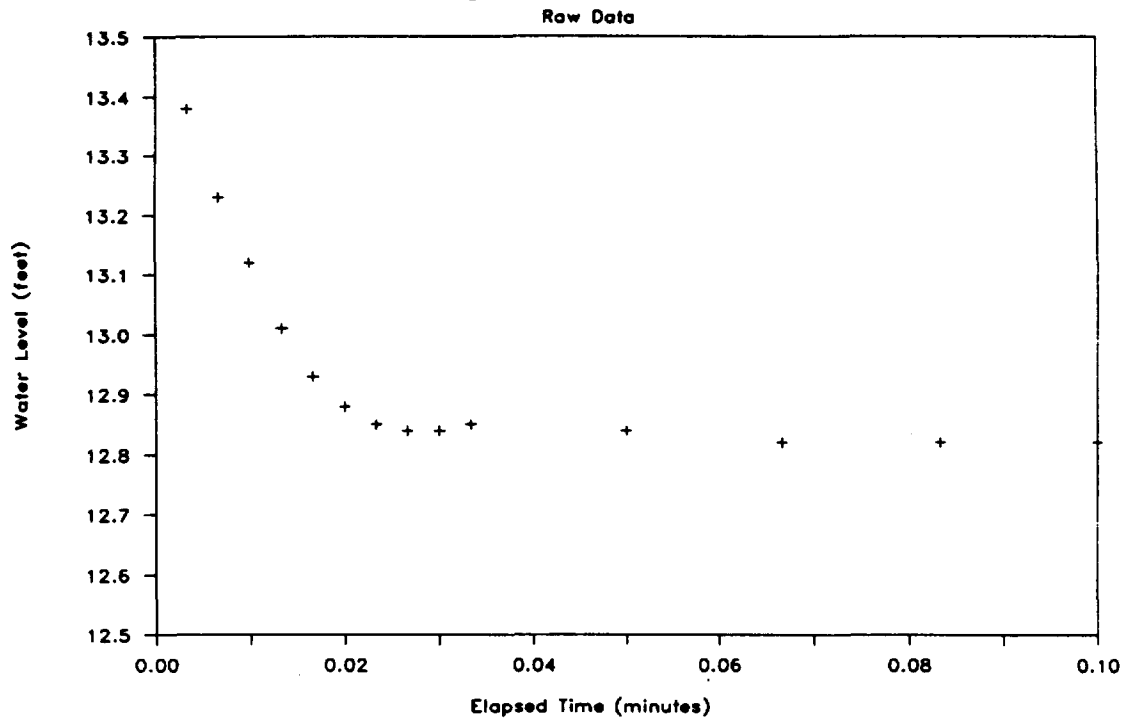
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	7.25E+00	10441.5	78093.9	1.12E-02
Transmissivity Partial-P (>b)	6.62E+00	9537.5	71332.9	1.03E-02

	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:					
Constant	0.268	0.003	13.38		0.268
Std Err of Y Est	0.023	0.007	13.23		-0.193
R Squared	0.999	0.010	13.12	0.32	-0.653
No. of Observations	5	0.013	13.01	0.21	-1.114
Degrees of Freedom	3	0.017	12.93	0.13	-1.589
		0.02	12.88	0.08	-2.050
		0.02	12.85	0.05	-2.524
X Coefficient(s) -139.62		0.03	12.84	0.04	-2.985
Std Err of Coef. 2.21		0.03	12.84	0.04	-3.446
		0.03	12.84	0.04	-3.920
		0.03	12.85	0.05	-4.381
		0.05	12.84	0.04	-4.713
		0.07	12.82	0.02	-5.031
		0.08	12.82	0.02	-5.362
		0.10	12.82	0.02	-5.694
		0.12	12.82	0.02	-6.012
		0.13	12.82	0.02	-6.343
		0.15	12.82	0.02	-6.675
		0.17	12.82	0.02	-7.003
		0.19	12.82	0.02	-7.334
		0.20	12.8	0	-7.666
		0.22			-7.997
		0.23			-8.328
		0.25			-8.659
		0.27			-8.990
		0.28			-9.321
		0.30			-9.652
		0.32			-9.983
		0.33			-10.314
		0.42			-10.645
		0.50			-10.976
		0.58			-11.307
		0.67			-11.638
		0.75			-11.969
		0.83			-12.300
		0.92			-12.631
		1.00			-12.962

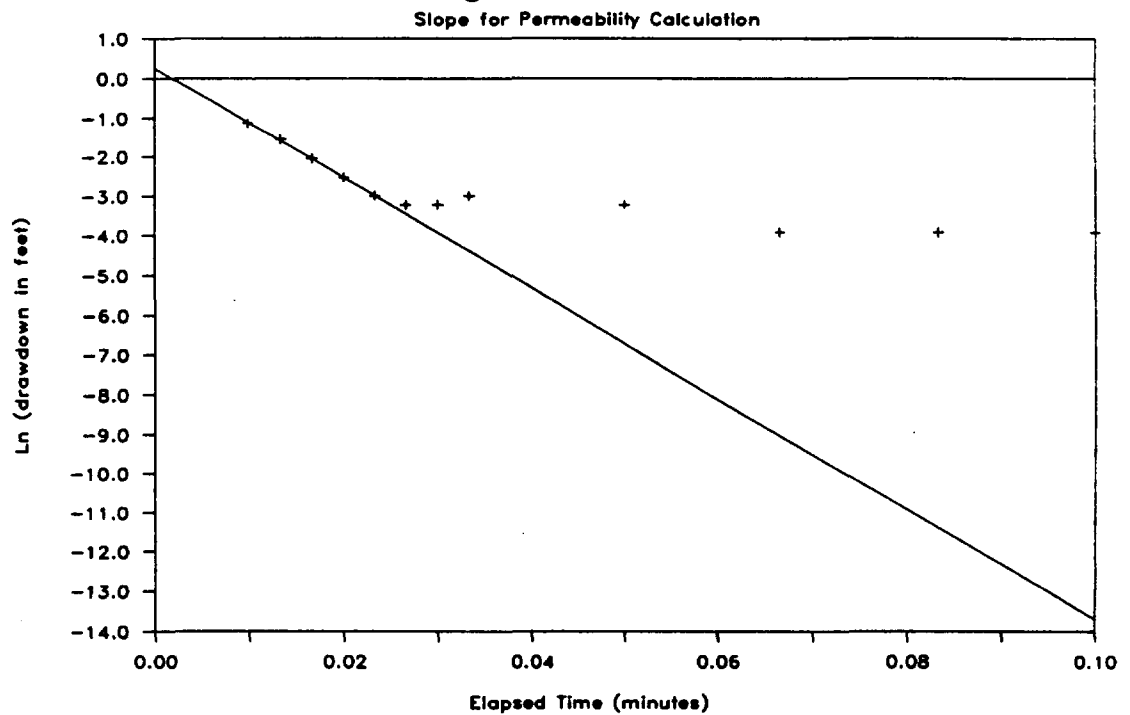
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MAXIMUM=	13.38
MINIMUM=	12.8

## Slug Test at MW-9s



## Slug Test at MW-9s



BAILDOWN TEST RESULTS FOR: MW-105  
WRR RI/FS Site

WELL INFORMATION

Casing Diameter (in)	
Effective Casing RADIUS (in)(rc)	2.15
Screen Diameter (in)	8.0
Effective RADIUS (in)(rw)	4.0
Screen Length (ft)(L)	6.0
Aquifer Thickness (ft)(D)	20.0
Well Penetration (ft)(H)	6.0

CALCULATED PARAMETERS

L / rw	18.0
A	2.0
B	0.3
C	NA
ln ((D-h)/rw)	3.74
ln (Re / rw) Fully Penetrating	NA
ln (Re / rw) Partially Penetrating	1.81
ln (Re / rw) Partially Penetrating(>b)	1.69
1/t + ln (Yo / Yt)	23.13

RESULTS

	FT/MIN	FT/DAY	GPD/SQ.FT	CM/SEC
Hydraulic Conductivity Fully-P	NA	NA	NA	
Hydraulic Conductivity Partial-P	1.12E-01	1.61E+02	1.20E+03	5.67E-02
Hydraulic Conductivity Partial-P (>b)	1.05E-01	1.51E+02	1.13E+03	5.31E-02

	SQ.M/MIN	SQ.FT/DAY	GPD/FT	SQ.M/SEC
Transmissivity Fully-P	NA	NA	NA	NA
Transmissivity Partial-P	2.23E+00	3217.1	24060.9	3.46E-03
Transmissivity Partial-P (>b)	2.09E+00	3012.0	22527.6	3.24E-03

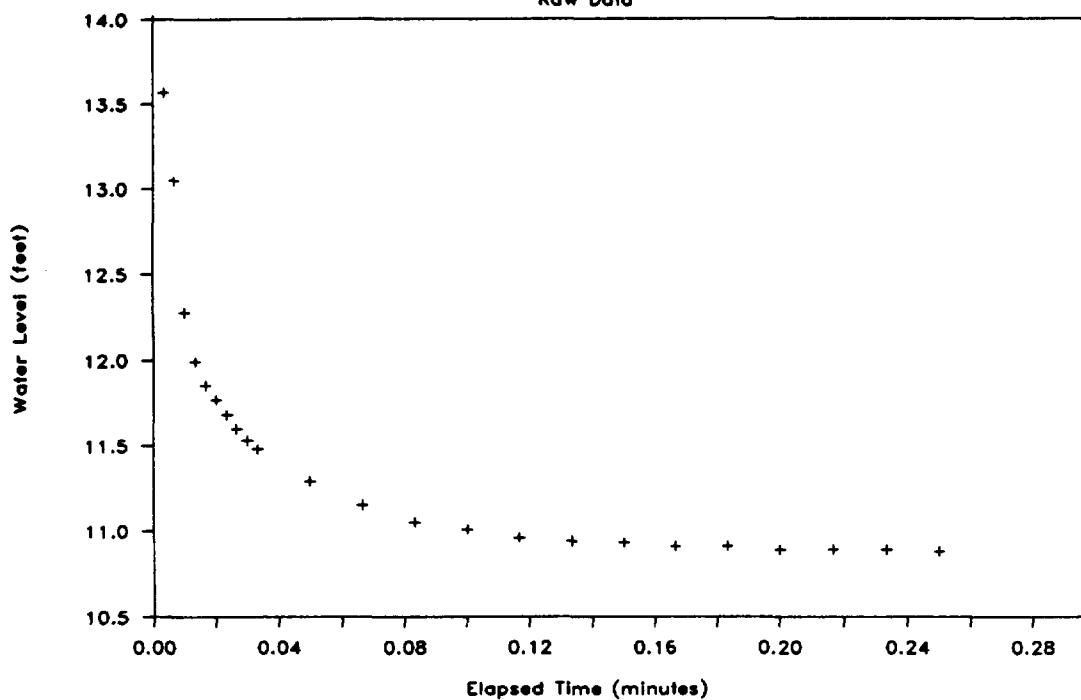
	Time (min)	Depth to Water	Water level Change	Natural Log of Water Level Change	REGR LINE CALC.
Regression Output:	0.0	14	3.12	1.138	0.295
Constant	0.295	0.003	13.57	2.69	0.990
Std Err of Y Est	0.007	0.007	13.05	2.17	0.775
R Squared	0.995	0.010	12.20	1.4	0.336
No. of Observations	15	0.013	11.99	1.11	0.104
Degrees of Freedom	13	0.017	11.05	0.97	-0.030
		0.02	11.77	0.89	-0.117
X Coefficient(s) -23.1327		0.02	11.68	0.8	-0.223
Std Err of Coef. 0.4405		0.03	11.6	0.72	-0.329
		0.03	11.53	0.65	-0.431
		0.03	11.48	0.6	-0.511
		0.05	11.29	0.41	-0.892
		0.07	11.15	0.27	-1.309
		0.08	11.05	0.17	-1.772
		0.10	11.01	0.13	-2.040
		0.12	10.96	0.09	-2.526
		0.13	10.94	0.06	-2.813
		0.15	10.93	0.05	-2.996
		0.17	10.91	0.03	-3.507
		0.18	10.91	0.03	-3.507
		0.20	10.89	0.01	-4.605
		0.22	10.89	0.01	-4.605
		0.23	10.89	0.01	-4.605
		0.25	10.80	0	-5.102
		0.27			-5.480
		0.28			-5.872
		0.30			-6.259
		0.32			-6.645
		0.33			-7.029
		0.42			-7.415
		0.50			-7.829
		0.58			-8.271
		0.67			-8.745
		0.75			-9.244
		0.83			-9.771
		0.92			-10.329
		1.00			-10.918

=====

MAXIMUM=	13.57
MINIMUM=	10.80

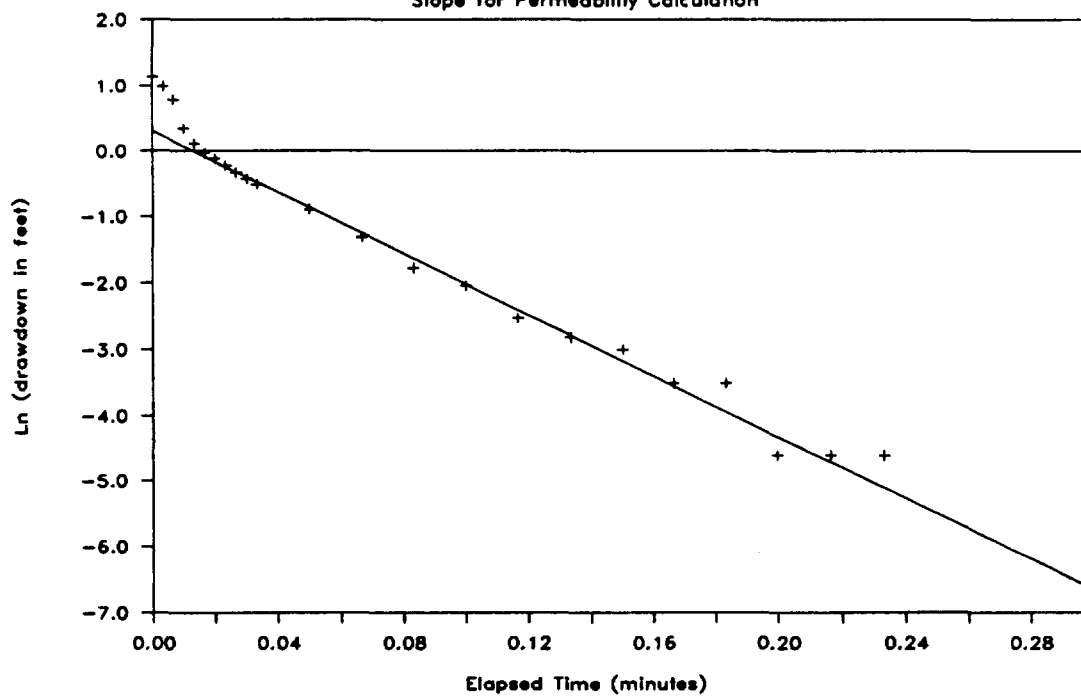
## Slug Test at MW-10s

Raw Data



## Slug Test at MW-10s

Slope for Permeability Calculation



## **APPENDIX H**

### **PUMPING TEST DATA**

H-1

RAW DATA AND NORMALIZED DATA

DRAWNDOWN AT 10 WELLS DURING PUMPING TEST  
WRR RI SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-1D 840	MW-1I 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-8D 838	MW-10S 827.43	MW-13D 830.46	MW-13S 831.17
08/24	01:12:00 PM	0	4.68	1.24	-0.02	0.10	0.34	-0.01	4.52	0.21	3.20	0.21
08/24	01:12:20 PM	0.34	4.72	1.32	0.03	0.10	0.33	0.00	4.56	0.17	3.23	0.23
08/24	01:12:25 PM	0.42	4.72	1.33	0.04	0.10	0.34	0.00	4.56	0.17	3.23	0.23
08/24	01:12:30 PM	0.51	4.73	1.34	0.04	0.08	0.34	-0.01	4.55	0.17	3.22	0.23
08/24	01:12:35 PM	0.59	4.73	1.33	0.04	0.07	0.34	0.00	4.55	0.17	3.22	0.22
08/24	01:12:40 PM	0.67	4.73	1.33	0.04	0.06	0.33	-0.01	4.55	0.17	3.22	0.21
08/24	01:12:45 PM	0.76	4.73	1.32	0.03	0.06	0.33	-0.01	4.55	0.17	3.21	0.21
08/24	01:12:50 PM	0.84	4.72	1.31	0.02	0.05	0.33	-0.01	4.53	0.16	3.21	0.21
08/24	01:12:55 PM	0.92	4.72	1.31	0.01	0.05	0.33	-0.01	4.53	0.16	3.20	0.20
Start Pump -->	01:13:00 PM	1.0	4.71	1.29	0.00	0.04	0.34	-0.01	4.52	0.16	3.20	0.21
08/24	01:13:25 PM	1.4	4.68	1.25	-0.05	-0.01	0.34	0.00	4.55	0.11	3.19	0.20
08/24	01:13:45 PM	1.7	4.66	1.23	-0.05	-0.05	0.35	0.00	4.55	0.07	3.17	0.18
08/24	01:14:05 PM	2.1	4.64	1.23	-0.05	-0.10	0.35	0.00	4.56	0.04	3.17	0.17
08/24	01:14:25 PM	2.4	4.61	1.21	-0.07	-0.13	0.34	0.00	4.55	0.02	3.17	0.18
08/24	01:14:45 PM	2.7	4.57	1.19	-0.08	-0.13	0.34	0.00	4.56	0.04	3.17	0.19
08/24	01:15:05 PM	3.1	4.55	1.19	-0.07	-0.01	0.35	0.00	4.56	0.09	3.20	0.23
08/24	01:15:25 PM	3.4	4.53	1.20	-0.07	0.06	0.36	0.00	4.56	0.15	3.22	0.24
08/24	01:15:45 PM	3.7	4.51	1.20	-0.07	0.07	0.36	0.00	4.56	0.22	3.22	0.25
08/24	01:16:05 PM	4.1	4.51	1.23	-0.03	0.09	0.36	0.00	4.55	0.21	3.22	0.24
08/24	01:16:25 PM	4.4	4.50	1.25	-0.01	0.08	0.35	-0.01	4.53	0.23	3.20	0.25
08/24	01:16:45 PM	4.7	4.50	1.29	0.02	0.09	0.36	0.00	4.53	0.22	3.18	0.24
08/24	01:17:05 PM	5.1	4.51	1.31	0.03	0.10	0.36	0.00	4.52	0.21	3.17	0.24
08/24	01:17:25 PM	5.4	4.49	1.31	0.02	0.09	0.36	0.00	4.51	0.21	3.17	0.23
08/24	01:17:45 PM	5.7	4.47	1.30	0.02	0.07	0.36	-0.01	4.49	0.19	3.14	0.21
08/24	01:18:05 PM	6.1	4.45	1.31	0.05	0.08	0.35	0.00	4.49	0.21	3.12	0.20
08/24	01:18:25 PM	6.4	4.44	1.32	0.05	0.09	0.34	0.00	4.48	0.24	3.11	0.21
08/24	01:18:45 PM	6.7	4.40	1.28	0.03	0.09	0.36	0.00	4.48	0.21	3.10	0.21
08/24	01:19:05 PM	7.1	4.36	1.26	0.03	0.08	0.37	0.00	4.48	0.19	3.10	0.20
08/24	01:19:25 PM	7.4	4.34	1.28	0.05	0.06	0.36	0.00	4.48	0.15	3.09	0.20
08/24	01:19:45 PM	7.7	4.31	1.27	0.03	0.04	0.36	0.00	4.48	0.15	3.08	0.21
08/24	01:20:05 PM	8.1	4.29	1.28	0.09	0.10	0.39	0.04	4.52	0.24	3.09	0.24
08/24	01:20:25 PM	8.4	4.36	1.43	0.31	0.25	0.42	0.06	4.59	0.38	3.14	0.32
08/24	01:20:45 PM	8.7	4.43	1.57	0.46	0.38	0.40	0.05	4.61	0.50	3.14	0.35
08/24	01:21:05 PM	9.1	4.45	1.59	0.46	0.44	0.37	0.02	4.58	0.54	3.13	0.34

DRAWNDOWN AT 10 WELLS DURING PUMPING TEST  
WRR RI SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-10 840	MW-11 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-80 838	MW-10S 827.43	MW-130 830.46	MW-13S 831.17
<hr/>												
08/24	01:21:25 PM	9.4	4.39	1.52	0.38	0.40	0.36	-0.01	4.51	0.48	3.06	0.27
08/24	01:21:45 PM	9.7	4.33	1.45	0.31	0.31	0.36	-0.01	4.45	0.39	3.02	0.22
08/24	01:22 PM	10	4.29	1.43	0.33	0.22	0.35	-0.01	4.42	0.31	2.98	0.19
08/24	01:24 PM	12	3.97	1.21	0.18	-0.03	0.38	0.03	4.41	0.15	2.91	0.23
08/24	01:26 PM	14	3.83	1.21	0.20	0.04	0.35	-0.02	4.29	0.20	2.78	0.15
08/24	01:28 PM	16	3.58	1.08	0.10	-0.07	0.34	-0.01	4.23	0.16	2.70	0.15
08/24	01:30 PM	18	3.38	1.00	0.03	-0.17	0.34	0.00	4.22	0.02	2.63	0.18
08/24	01:32 PM	20	3.18	0.90	-0.07	-0.18	0.34	0.00	4.19	-0.01	2.59	0.19
08/24	01:34 PM	22	3.04	0.87	-0.18	-0.18	0.34	0.00	4.12	-0.02	2.49	0.17
08/24	01:36 PM	24	2.99	0.96	-0.10	-0.11	0.35	0.01	4.12	0.02	2.48	0.23
08/24	01:38 PM	26	2.99	1.04	-0.05	-0.01	0.34	0.00	4.05	0.03	2.44	0.23
08/24	01:40 PM	28	2.95	1.10	0.05	0.15	0.34	-0.01	3.99	0.19	2.36	0.21
08/24	01:42 PM	30	2.83	1.04	0.08	0.19	0.35	0.00	3.97	0.29	2.34	0.24
08/24	01:44 PM	32	2.79	1.04	0.14	0.11	0.35	0.00	3.89	0.18	2.24	0.18
08/24	01:46 PM	34	2.66	0.98	0.12	0.18	0.37	0.00	3.83	0.24	2.21	0.22
08/24	01:48 PM	36	2.51	0.88	0.05	0.08	0.36	0.00	3.79	0.24	2.15	0.20
08/24	01:50 PM	38	2.50	0.98	0.23	0.05	0.37	0.01	3.74	0.24	2.13	0.23
08/24	01:52 PM	40	2.46	0.96	0.20	-0.01	0.35	-0.01	3.66	0.12	2.03	0.17
08/24	01:54 PM	42	2.33	0.86	0.15	-0.03	0.34	0.00	3.60	0.15	2.00	0.18
08/24	01:56 PM	44	2.26	0.83	0.18	0.09	0.35	0.02	3.60	0.22	1.98	0.23
08/24	01:58 PM	46	2.22	0.82	0.19	0.03	0.34	0.00	3.53	0.24	1.90	0.18
08/24	02:00 PM	48	2.33	1.05	0.49	0.29	0.36	0.00	3.54	0.47	1.93	0.24
08/24	02:02 PM	50	2.25	1.02	0.60	0.29	0.41	0.05	3.51	0.50	1.94	0.30
08/24	02:04 PM	52	2.48	1.35	1.08	0.73	0.39	0.04	3.51	0.79	1.96	0.36
08/24	02:06 PM	54	2.50	1.34	1.30	0.70	0.39	0.02	3.36	0.75	1.89	0.30
08/24	02:08 PM	56	2.17	0.88	0.98	0.05	0.34	-0.04	3.10	0.26	1.68	0.08
08/24	02:10 PM	58	1.87	0.65	0.76	-0.16	0.37	0.00	3.16	0.15	1.70	0.17
08/24	02:12 PM	60	2.04	0.94	1.04	0.18	0.36	0.02	3.24	0.40	1.78	0.29
08/24	02:14 PM	62	2.14	1.11	1.28	0.42	0.37	0.03	3.20	0.57	1.76	0.30
08/24	02:16 PM	64	1.66	0.47	0.59	-0.12	0.32	-0.03	2.91	0.11	1.54	0.06
08/24	02:18 PM	66	1.92	0.96	1.13	0.39	0.38	0.03	3.14	0.54	1.70	0.30
08/24	02:20 PM	68	1.65	0.56	0.63	-0.09	0.32	-0.02	2.84	0.09	1.49	0.07
08/24	02:22 PM	70	1.40	0.34	0.31	-0.23	0.34	-0.01	2.84	-0.02	1.50	0.12
08/24	02:24 PM	72	1.29	0.27	0.09	-0.28	0.35	0.00	2.84	-0.07	1.50	0.16

DRAWNDOWN AT 10 WELLS DURING PUMPING TEST  
WRR RI SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-10 840	MW-11 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-8D 838	MW-10S 827.43	MW-13D 830.46	MW-13S 831.17
08/24	02:26 PM	74	1.48	0.64	0.40	0.06	0.38	0.05	2.95	0.19	1.57	0.29
08/24	02:28 PM	76	1.90	1.15	0.99	0.58	0.35	0.02	2.90	0.58	1.58	0.32
08/24	02:30 PM	78	1.54	0.58	0.48	0.14	0.33	-0.02	2.65	0.19	1.42	0.13
08/24	02:32 PM	80	1.76	0.98	1.00	0.48	0.37	0.04	2.80	0.50	1.53	0.31
08/24	02:34 PM	82	1.80	0.96	1.08	0.49	0.34	0.02	2.67	0.55	1.46	0.24
08/24	02:36 PM	84	1.64	0.74	0.95	0.35	0.33	0.00	2.57	0.43	1.40	0.19
08/24	02:38 PM	86	1.42	0.54	0.80	0.12	0.34	0.01	2.54	0.30	1.35	0.17
08/24	02:40 PM	88	1.55	0.75	1.02	0.23	0.35	0.02	2.55	0.40	1.37	0.22
08/24	02:42 PM	90	1.46	0.61	0.85	0.06	0.29	-0.04	2.37	0.22	1.26	0.10
08/24	02:44 PM	92	1.22	0.41	0.64	-0.18	0.35	0.03	2.42	0.04	1.30	0.18
08/24	02:46 PM	94	1.44	0.74	0.94	0.21	0.34	0.02	2.47	0.34	1.32	0.24
08/24	02:48 PM	96	1.29	0.47	0.64	-0.01	0.28	-0.04	2.22	0.07	1.18	0.06
08/24	02:50 PM	98	0.94	0.09	0.15	-0.34	0.28	-0.02	2.19	-0.19	1.19	0.11
08/24	02:52 PM	100	0.80	0.00	-0.15	-0.55	0.29	-0.01	2.21	-0.33	1.12	0.07
08/24	03:12 PM	120	1.04	0.39	-0.11	-0.04	0.28	0.00	1.91	0.01	1.03	0.15
08/24	03:32 PM	140	0.83	0.21	-0.19	-0.04	0.25	0.00	1.60	0.04	0.86	0.11
08/24	03:52 PM	160	0.82	0.31	0.00	-0.04	0.25	0.01	1.39	0.06	0.78	0.12
08/24	04:12 PM	180	0.70	0.17	0.43	-0.03	0.23	-0.01	1.09	0.12	0.65	0.06
08/24	04:32 PM	200	0.73	0.43	0.43	0.24	0.23	0.02	1.10	0.29	0.66	0.18
08/24	04:52 PM	220	0.55	0.25	0.26	0.13	0.20	0.01	0.91	0.16	0.55	0.13
08/24	05:12 PM	240	0.51	0.20	0.18	0.07	0.20	0.01	0.74	0.07	0.47	0.10
08/24	05:32 PM	260	0.48	0.23	0.43	0.11	0.18	0.01	0.64	0.15	0.42	0.09
08/24	05:52 PM	280	0.50	0.31	0.59	0.14	0.17	0.01	0.56	0.26	0.37	0.10
08/24	06:12 PM	300	0.38	0.20	0.48	0.09	0.15	0.01	0.47	0.15	0.31	0.07
08/24	06:32 PM	320	0.25	0.09	0.34	0.01	0.14	0.00	0.38	0.06	0.26	0.05
08/24	06:52 PM	340	0.27	0.14	0.38	0.07	0.15	0.01	0.33	0.11	0.23	0.05
08/24	07:12 PM	360	0.22	0.12	0.38	0.07	0.13	0.01	0.25	0.09	0.19	0.05
08/24	07:32 PM	380	0.17	0.09	0.33	0.07	0.12	0.01	0.21	0.06	0.16	0.04
08/24	07:52 PM	400	0.13	0.07	0.25	0.05	0.06	0.00	0.15	0.08	0.12	0.03
08/24	08:12 PM	420	0.07	0.04	0.11	0.01	0.04	0.00	0.11	0.01	0.09	0.02
08/24	08:32 PM	440	0.05	0.02	0.07	0.01	0.03	0.00	0.07	0.01	0.05	0.01
08/24	08:52 PM	460	0.03	0.02	0.04	0.01	0.02	0.00	0.04	0.02	0.03	0.00
08/24	09:12 PM	480	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
08/24	09:14 PM	482	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00

DRAWNDOWN AT 10 WELLS DURING PUMPING TEST  
WRR RI SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-1D 840	MW-1I 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-8D 838	MW-10S 827.43	MW-13D 830.46	MW-13S 831.17
08/24	09:20 PM	488.4	0.13	0.00	-0.01	-0.01	0.01	0.00	0.01	-0.01	0.03	-0.01
08/24	09:20 PM	488.8	0.16	0.00	-0.01	-0.01	0.01	0.00	0.01	-0.01	0.04	0.00
08/24	09:21 PM	489.1	0.20	0.00	-0.01	-0.01	0.01	0.00	0.02	-0.01	0.04	-0.01
08/24	09:21 PM	489.4	0.23	0.01	-0.02	-0.01	0.01	0.00	0.02	-0.01	0.05	0.00
08/24	09:21 PM	489.8	0.26	0.01	-0.01	-0.01	0.00	0.00	0.04	-0.01	0.07	-0.01
08/24	09:22 PM	490.1	0.30	0.01	-0.01	-0.01	0.01	0.00	0.04	-0.01	0.08	-0.01
08/24	09:22 PM	490.4	0.34	0.01	-0.02	-0.01	0.01	0.00	0.05	-0.01	0.10	-0.01
08/24	09:22 PM	490.8	0.37	0.01	-0.02	-0.01	0.01	0.00	0.05	-0.01	0.10	-0.01
08/24	09:23 PM	491.1	0.41	0.02	-0.02	-0.01	0.01	0.00	0.07	-0.01	0.12	-0.01
08/24	09:23 PM	491.4	0.45	0.02	-0.02	-0.01	0.01	0.00	0.07	-0.01	0.13	-0.01
08/24	09:23 PM	491.8	0.49	0.02	-0.02	-0.01	0.01	0.00	0.08	-0.01	0.15	-0.01
08/24	09:24 PM	492.1	0.52	0.02	-0.02	-0.01	0.01	0.00	0.10	-0.01	0.16	-0.01
08/24	09:24 PM	492.4	0.56	0.03	-0.02	-0.01	0.01	0.00	0.10	-0.01	0.17	-0.01
08/24	09:24 PM	492.8	0.60	0.03	-0.02	-0.01	0.01	0.00	0.11	-0.01	0.19	-0.01
08/24	09:25 PM	493.1	0.63	0.03	-0.02	-0.01	0.01	0.00	0.12	-0.01	0.20	-0.01
08/24	09:25 PM	493.4	0.67	0.03	-0.02	-0.01	0.01	0.00	0.14	-0.01	0.22	-0.01
08/24	09:25 PM	493.8	0.70	0.03	-0.02	-0.01	0.00	0.00	0.14	-0.01	0.23	-0.01
08/24	09:26 PM	494.1	0.73	0.04	-0.02	-0.01	0.01	0.00	0.15	-0.01	0.24	-0.01
08/24	09:26 PM	494.4	0.77	0.04	-0.03	-0.01	0.01	0.00	0.17	-0.02	0.26	-0.01
08/24	09:26 PM	494.8	0.80	0.04	-0.03	-0.02	0.01	0.00	0.18	-0.02	0.27	-0.01
08/24	09:27 PM	495.1	0.83	0.04	-0.03	-0.02	0.00	0.00	0.20	-0.02	0.29	-0.01
08/24	09:29 PM	497	1.01	0.05	-0.06	-0.03	0.00	0.00	0.27	-0.03	0.36	-0.01
08/24	09:31 PM	499	1.16	0.06	-0.09	-0.04	0.00	0.00	0.37	-0.04	0.43	-0.01
08/24	09:33 PM	501	1.30	0.08	-0.10	-0.05	0.00	0.00	0.47	-0.04	0.50	-0.01
08/24	09:35 PM	503	1.46	0.12	-0.10	-0.03	0.00	0.00	0.60	-0.04	0.58	-0.01
08/24	09:37 PM	505	1.57	0.15	-0.10	-0.03	0.00	0.00	0.68	-0.03	0.64	-0.01
08/24	09:39 PM	507	1.68	0.18	-0.09	-0.01	0.00	0.00	0.79	-0.03	0.70	0.00
08/24	09:41 PM	509	1.79	0.21	-0.09	-0.01	0.00	0.00	0.89	-0.02	0.76	0.00
08/24	09:43 PM	511	1.88	0.23	-0.08	-0.01	0.00	0.00	0.99	-0.01	0.81	0.00
08/24	09:45 PM	513	1.96	0.26	-0.07	0.00	0.01	0.00	1.09	-0.01	0.87	0.00
08/24	09:47 PM	515	2.03	0.27	-0.07	-0.01	0.01	0.00	1.17	-0.01	0.93	0.00
08/24	09:49 PM	517	2.10	0.29	-0.07	-0.01	0.01	0.00	1.27	-0.02	0.96	0.00
08/24	09:51 PM	519	2.17	0.31	-0.06	-0.01	0.01	0.00	1.36	0.04	1.01	0.00
08/24	09:53 PM	521	2.23	0.33	-0.06	-0.01	0.01	0.00	1.45	0.03	1.06	0.00

## DRAWNDOWN AT 10 WELLS DURING PUMPING TEST

WRR RI SITE

COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-10 840	MW-11 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-8D 838	MW-10S 827.43	MW-13D 830.46	MW-13S 831.17
08/24	09:55 PM	523	2.29	0.35	-0.06	-0.01	0.01	0.00	1.52	0.02	1.10	0.00
08/24	09:57 PM	525	2.35	0.36	-0.05	-0.01	0.01	0.00	1.60	0.02	1.13	0.00
08/24	09:59 PM	527	2.40	0.38	-0.05	-0.01	0.02	0.00	1.68	0.01	1.18	0.00
08/24	10:01 PM	529	2.45	0.39	-0.05	-0.01	0.02	0.00	1.75	0.00	1.21	0.00
08/24	10:03 PM	531	2.49	0.40	-0.06	-0.02	0.02	0.00	1.81	-0.01	1.25	0.00
08/24	10:05 PM	533	2.53	0.41	-0.08	-0.03	0.02	0.00	1.88	-0.01	1.28	0.00
08/24	10:07 PM	535	2.56	0.41	-0.11	-0.05	0.02	0.00	1.93	-0.03	1.31	0.00
08/24	10:09 PM	537	2.59	0.42	-0.13	-0.05	0.02	0.00	1.99	-0.03	1.34	0.00
08/24	10:11 PM	539	2.64	0.45	-0.13	-0.04	0.02	0.00	2.06	-0.03	1.38	0.01
08/24	10:13 PM	541	2.70	0.48	-0.11	-0.03	0.03	0.00	2.12	-0.02	1.41	0.01
08/24	10:15 PM	543	2.75	0.51	-0.10	-0.01	0.03	0.00	2.18	-0.01	1.44	0.02
08/24	10:17 PM	545	2.80	0.53	-0.08	-0.01	0.03	0.00	2.22	-0.01	1.47	0.02
08/24	10:19 PM	547	2.84	0.54	-0.07	0.00	0.03	0.00	2.28	0.00	1.51	0.02
08/24	10:21 PM	549	2.87	0.55	-0.06	0.00	0.03	0.00	2.32	0.00	1.53	0.02
08/24	10:23 PM	551	2.91	0.57	-0.05	0.00	0.04	0.00	2.37	0.00	1.56	0.02
08/24	10:25 PM	553	2.94	0.57	-0.05	0.00	0.04	0.00	2.41	0.00	1.58	0.02
08/24	10:27 PM	555	2.97	0.59	-0.04	-0.01	0.04	0.00	2.45	0.00	1.61	0.02
08/24	10:29 PM	557	2.99	0.59	-0.04	-0.01	0.04	-0.01	2.49	0.00	1.63	0.03
08/24	10:31 PM	559	3.02	0.61	-0.04	-0.01	0.04	0.00	2.54	-0.01	1.66	0.03
08/24	10:33 PM	561	3.05	0.61	-0.03	-0.01	0.04	-0.01	2.58	0.00	1.68	0.03
08/24	10:35 PM	563	3.07	0.62	-0.03	-0.01	0.04	0.00	2.61	0.00	1.70	0.03
08/24	10:37 PM	565	3.10	0.64	-0.03	-0.01	0.04	0.00	2.65	0.00	1.73	0.03
08/24	10:39 PM	567	3.12	0.64	-0.04	-0.01	0.04	0.00	2.68	-0.01	1.75	0.03
08/24	10:41 PM	569	3.14	0.65	-0.04	-0.02	0.05	0.00	2.71	-0.01	1.77	0.03
08/24	10:43 PM	571	3.17	0.66	-0.04	-0.02	0.05	-0.01	2.75	-0.01	1.80	0.04
08/24	10:45 PM	573	3.19	0.68	-0.04	-0.01	0.05	0.00	2.78	-0.01	1.82	0.04
08/24	10:47 PM	575	3.22	0.68	-0.04	-0.01	0.06	-0.01	2.81	-0.01	1.83	0.04
08/24	10:49 PM	577	3.24	0.69	-0.04	-0.01	0.06	-0.01	2.84	-0.01	1.85	0.04
08/24	10:51 PM	579	3.26	0.70	-0.04	-0.02	0.06	-0.01	2.87	-0.01	1.87	0.04
08/24	10:53 PM	581	3.28	0.70	-0.05	-0.02	0.06	-0.01	2.90	-0.01	1.89	0.04
08/24	10:55 PM	583	3.30	0.71	-0.06	-0.03	0.06	-0.01	2.93	-0.02	1.91	0.04
08/24	11:17 PM	605	3.47	0.77	-0.16	-0.06	0.08	-0.01	3.17	-0.05	2.08	0.05
08/24	11:37 PM	625	3.67	0.90	-0.16	0.00	0.09	0.00	3.37	-0.01	2.22	0.07
08/24	11:57 PM	645	3.78	0.95	0.00	0.00	0.11	0.00	3.51	0.02	2.33	0.07

DRAWNDOWN AT 10 WELLS DURING PUMPING TEST  
WRR RI SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min) 0	MW-1D 840	MW-1I 841.54	MW-1S 840.97	MW-3S 828.75	MW-7S 840.58	MW-8S 839.91	MW-8D 838	MW-10S 827.43	MW-13D 830.46	MW-13S 831.17
08/25	12:17 AM	665	3.87	1.00	0.01	-0.01	0.12	0.00	3.63	0.01	2.43	0.09
08/25	12:37 AM	685	3.96	1.04	0.01	-0.02	0.13	0.00	3.73	-0.01	2.50	0.10
08/25	12:57 AM	705	4.03	1.08	0.01	-0.01	0.15	0.00	3.83	0.00	2.58	0.11
08/25	01:17 AM	725	4.10	1.14	0.00	-0.01	0.16	0.00	3.92	0.01	2.64	0.11
08/25	01:37 AM	745	4.16	1.16	0.00	-0.02	0.16	0.00	3.97	0.00	2.70	0.11
08/25	01:57 AM	765	4.22	1.19	-0.01	-0.02	0.17	0.00	4.05	0.00	2.74	0.12
08/25	02:17 AM	785	4.27	1.21	-0.01	-0.01	0.18	0.00	4.09	0.02	2.78	0.13
08/25	02:37 AM	805	4.31	1.23	0.00	-0.01	0.19	0.00	4.15	0.01	2.83	0.13
08/25	02:57 AM	825	4.34	1.25	-0.01	-0.02	0.20	0.00	4.19	0.00	2.86	0.14
08/25	03:17 AM	845	4.38	1.26	-0.02	-0.02	0.21	0.00	4.23	0.00	2.90	0.14
08/25	03:37 AM	865	4.42	1.28	0.00	-0.01	0.21	0.00	4.28	0.02	2.92	0.15
08/25	03:57 AM	885	4.45	1.30	0.03	-0.01	0.23	0.00	4.30	0.03	2.96	0.16
08/25	04:17 AM	905	4.47	1.31	0.05	-0.01	0.23	0.00	4.33	0.02	2.98	0.16
08/25	04:37 AM	925	4.50	1.33	0.06	0.00	0.24	0.00	4.36	0.02	3.01	0.17
08/25	04:57 AM	945	4.53	1.35	0.05	0.00	0.24	0.00	4.39	0.03	3.04	0.17
08/25	05:17 AM	965	4.55	1.36	0.09	0.00	0.25	0.00	4.42	0.04	3.05	0.18
08/25	05:37 AM	985	4.57	1.36	0.10	0.00	0.25	0.00	4.45	0.04	3.07	0.18
08/25	05:57 AM	1005	4.58	1.37	0.09	0.01	0.30	0.00	4.46	0.04	3.09	0.18
08/25	06:17 AM	1025	4.59	1.37	0.05	-0.01	0.29	0.00	4.48	0.02	3.10	0.18
08/25	06:37 AM	1045	4.60	1.38	0.00	-0.02	0.30	0.00	4.51	0.00	3.11	0.18
08/25	06:57 AM	1065	4.60	1.37	-0.12	-0.06	0.30	0.00	4.52	-0.03	3.12	0.18
08/25	07:17 AM	1085	4.61	1.37	-0.18	-0.08	0.31	0.00	4.53	-0.03	3.13	0.18
08/25	07:37 AM	1105	4.63	1.36	-0.26	-0.09	0.32	0.00	4.55	-0.04	3.14	0.18
08/25	07:57 AM	1125	4.62	1.34	-0.32	-0.09	0.32	0.00	4.56	0.02	3.16	0.18
08/25	08:17 AM	1145	4.61	1.33	-0.46	-0.09	0.33	0.00	4.58	-0.02	3.17	0.18
08/25	08:37 AM	1165	4.63	1.33	-0.59	-0.12	0.34	0.00	4.59	-0.05	3.17	0.18
08/25	08:57 AM	1185	4.60	1.27	-0.76	-0.11	0.35	0.00	4.59	-0.04	3.17	0.18
End Recovery -->	09:17 AM	1205	4.68	1.36	-0.76	-0.15	0.36	0.00	4.62	-0.07	3.17	0.17
08/25	09:37 AM	1225	3.53	1.16	-0.76	-0.14	0.36	-0.01	4.25	-0.08	2.68	0.17
08/25	09:57 AM	1245	2.96	1.01	-0.78	-0.09	0.35	-0.01	3.84	-0.05	2.36	0.17
08/25	10:17 AM	1265	2.61	0.79	-0.75	-0.03	0.35	0.00	3.44	0.01	2.13	0.15
08/25	10:37 AM	1285	2.44	0.72	-0.64	-0.11	0.34	0.00	3.05	-0.06	1.87	0.14

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
----->					
08/22	11:00 AM	0	813.55		
08/22	11:20 AM	0	813.47		
08/22	11:35 AM	15	813.42		
08/22	11:50 AM	30	814.19		
	12:00 PM		814.05		
08/22	12:05 PM	45	814.14		
08/22	12:20 PM	60	814.33		
08/22	12:35 PM	75	814.76		
08/22	12:50 PM	90	815.08		
08/22	01:05 PM	105	815.27		
08/22	01:20 PM	120	815.44		
08/22	01:35 PM	135	814.59		
08/22	01:50 PM	150	814.35		
08/22	02:05 PM	165	814.04		
08/22	02:20 PM	180	813.72		
08/22	02:35 PM	195	813.83		
08/22	02:50 PM	210	813.47		
08/22	03:05 PM	225	813.46		
08/22	03:20 PM	240	813.62		
08/22	03:35 PM	255	813.25		
08/22	03:50 PM	270	813.38		
08/22	04:05 PM	285	813.48		
08/22	04:20 PM	300	813.06		
08/22	04:35 PM	315	813.32		
08/22	04:50 PM	330	813.26		
08/22	05:05 PM	345	814.04		
08/22	05:20 PM	360	814.49		
08/22	05:35 PM	375	814.78		
08/22	05:50 PM	390	815.05		
08/22	06:05 PM	405	815.23		
08/22	06:20 PM	420	815.37		
08/22	06:35 PM	435	815.47		
08/22	06:50 PM	450	815.59		
08/22	07:05 PM	465	815.67		
08/22	07:20 PM	480	815.75		
08/22	07:35 PM	495	815.81		
08/22	07:50 PM	510	815.85		
08/22	08:05 PM	525	815.91		
08/22	08:20 PM	540	815.96		
08/22	08:35 PM	555	816.00		
08/22	08:50 PM	570	816.03		
08/22	09:05 PM	585	816.06		
08/22	09:20 PM	600	816.09		
08/22	09:35 PM	615	816.12		
08/22	09:50 PM	630	816.15		

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/22	10:05 PM	645	816.18		
08/22	10:20 PM	660	816.21		
08/22	10:35 PM	675	816.22		
08/22	10:50 PM	690	816.24		
08/22	11:05 PM	705	816.26		
08/22	11:20 PM	720	816.28		
08/22	11:35 PM	735	816.16		
08/22	11:50 PM	750	815.26		
-----> 08/23	12:05 AM	765	814.91		
08/23	12:20 AM	780	814.71		
08/23	12:35 AM	795	814.17		
08/23	12:50 AM	810	814.25		
08/23	01:05 AM	825	814.08		
08/23	01:20 AM	840	813.77		
08/23	01:35 AM	855	813.96		
08/23	01:50 AM	870	813.66		
08/23	02:05 AM	885	813.59		
08/23	02:20 AM	900	813.79		
08/23	02:35 AM	915	813.38		
08/23	02:50 AM	930	813.51		
08/23	03:05 AM	945	813.89		
08/23	03:20 AM	960	814.49		
08/23	03:35 AM	975	814.86		
08/23	03:50 AM	990	815.11		
08/23	04:05 AM	1005	815.30		
08/23	04:20 AM	1020	815.47		
08/23	04:35 AM	1035	815.58		
08/23	04:50 AM	1050	815.68		
08/23	05:05 AM	1065	815.78		
08/23	05:20 AM	1080	815.85		
08/23	05:35 AM	1095	815.91		
08/23	05:50 AM	1110	815.98		
08/23	06:05 AM	1125	816.03		
08/23	06:20 AM	1140	816.08		
08/23	06:35 AM	1155	816.12		
08/23	06:50 AM	1170	816.16		
08/23	07:05 AM	1185	816.19		
08/23	07:20 AM	1200	816.23		
08/23	07:35 AM	1215	816.26		
08/23	07:50 AM	1230	816.28		
08/23	08:05 AM	1245	816.30		
08/23	08:20 AM	1260	816.32		
08/23	08:35 AM	1275	816.34		
08/23	08:50 AM	1290	816.36		
08/23	09:05 AM	1305	816.37		
08/23	09:20 AM	1320	816.38		

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
----->					
08/23	09:35 AM	1335	816.37		
08/23	09:50 AM	1350	816.37		
08/23	11:00 AM	0	816.37	814.99	816.13
08/23	11:15 AM	15	816.37	815.03	816.20
08/23	11:30 AM	30	816.38	815.08	816.27
08/23	11:45 AM	45	816.39	815.10	816.32
08/23	12:00 PM	60	816.40	815.14	816.39
08/23	12:15 PM	75	816.43	815.15	816.45
08/23	12:30 PM	90	816.45	815.20	816.49
08/23	12:45 PM	105	816.09	815.12	816.42
08/23	01:00 PM	120	816.23	815.18	816.50
08/23	01:15 PM	135	816.21	815.23	816.66
08/23	01:30 PM	150	816.22	815.20	816.55
08/23	01:45 PM	165	815.63	814.90	816.35
08/23	02:00 PM	180	815.24	814.71	816.16
08/23	02:15 PM	195	814.71	814.33	815.86
08/23	02:30 PM	210	814.48	814.19	815.60
08/23	02:45 PM	225	814.44	814.13	815.34
08/23	03:00 PM	240	813.84	813.76	815.01
08/23	03:15 PM	255	813.93	813.83	814.88
08/23	03:30 PM	270	813.84	813.68	814.65
08/23	03:45 PM	285	813.50	813.49	814.44
08/23	04:00 PM	300	813.67	813.59	814.33
08/23	04:15 PM	315	813.41	813.37	814.10
08/23	04:30 PM	330	813.49	813.37	814.03
08/23	04:45 PM	345	813.63	813.40	813.95
08/23	05:00 PM	360	813.14	813.17	813.80
08/23	05:15 PM	375	813.37	813.29	813.77
08/23	05:30 PM	390	813.43	813.23	813.69
08/23	05:45 PM	405	813.00	813.07	813.57
08/23	06:00 PM	420	813.35	813.22	813.56
08/23	06:15 PM	435	813.16	813.04	813.46
08/23	06:30 PM	450	813.11	813.04	813.43
08/23	06:45 PM	465	813.32	813.14	813.42
08/23	07:00 PM	480	812.89	812.92	813.31
08/23	07:15 PM	495	813.07	813.03	813.33
08/23	07:30 PM	510	813.24	813.04	813.30
08/23	07:45 PM	525	812.78	812.85	813.21
08/23	08:00 PM	540	813.06	813.00	813.24
08/23	08:15 PM	555	813.02	812.91	813.19
08/23	08:30 PM	570	812.79	812.84	813.16
08/23	08:45 PM	585	813.10	812.98	813.20
08/23	09:00 PM	600	812.80	812.80	813.11
08/23	09:15 PM	615	813.69	813.17	813.43
08/23	09:30 PM	630	814.21	813.45	813.92
08/23	09:45 PM	645	814.55	813.68	814.36

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/23	10:00 PM	660	814.81	813.86	814.71
08/23	10:15 PM	675	814.98	814.00	814.95
08/23	10:30 PM	690	815.15	814.13	815.17
08/23	10:45 PM	705	815.29	814.25	815.34
08/23	11:00 PM	720	815.43	814.35	815.48
08/23	11:15 PM	735	815.52	814.44	815.60
08/23	11:30 PM	750	815.56	814.51	815.70
08/23	11:45 PM	765	815.66	814.57	815.80
08/24	12:00 AM	780	815.73	814.63	815.87
08/24	12:15 AM	795	815.81	814.69	815.94
08/24	12:30 AM	810	815.86	814.74	816.02
08/24	12:45 AM	825	815.88	814.78	816.07
08/24	01:00 AM	840	815.98	814.83	816.13
08/24	01:15 AM	855	816.00	814.86	816.17
08/24	01:30 AM	870	816.04	814.89	816.22
08/24	01:45 AM	885	816.07	814.93	816.26
08/24	02:00 AM	900	816.10	814.96	816.30
08/24	02:15 AM	915	816.13	814.98	816.35
08/24	02:30 AM	930	816.15	815.01	816.36
08/24	02:45 AM	945	816.18	815.03	816.39
08/24	03:00 AM	960	816.20	815.05	816.42
08/24	03:15 AM	975	816.23	815.07	816.45
08/24	03:30 AM	990	816.25	815.09	816.46
08/24	03:45 AM	1005	816.27	815.11	816.49
08/24	04:00 AM	1020	816.29	815.13	816.50
08/24	04:15 AM	1035	816.31	815.15	816.52
08/24	04:30 AM	1050	816.31	815.15	816.55
08/24	04:45 AM	1065	816.33	815.17	816.55
08/24	05:00 AM	1080	816.35	815.18	816.58
08/24	05:15 AM	1095	816.35	815.20	816.59
08/24	05:30 AM	1110	816.37	815.21	816.60
08/24	05:45 AM	1125	816.38	815.21	816.62
08/24	06:00 AM	1140	816.40	815.23	816.63
08/24	06:15 AM	1155	816.30	815.22	816.62
08/24	06:30 AM	1170	815.26	814.73	816.32
08/24	06:45 AM	1185	814.90	814.57	816.07
08/24	07:00 AM	1200	814.67	814.33	815.77
08/24	07:15 AM	1215	814.07	814.01	815.45
08/24	07:30 AM	1230	814.65	814.14	815.28
08/24	07:45 AM	1245	815.11	814.33	815.33
08/24	08:00 AM	1260	815.38	814.48	815.45
08/24	08:15 AM	1275	815.55	814.60	815.63
08/24	08:30 AM	1290	815.72	814.69	815.80
08/24	08:45 AM	1305	815.77	814.76	815.93
08/24	09:00 AM	1320	815.86	814.83	816.04
08/24	09:15 AM	1335	815.98	814.88	816.14

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/24	09:30 AM	1350	815.98	814.94	816.24
08/24	09:45 AM	1365	816.05	814.96	816.27
08/24	10:00 AM	1380	816.08	815.01	816.35
08/24	10:15 AM	1395	816.18	815.05	816.40
08/24	10:30 AM	1410	816.14	815.06	816.46
08/24	10:45 AM	1425	816.24	815.10	816.46
08/24	11:00 AM	1440	816.21	815.11	816.50
08/24	11:15 AM	1455	816.33	815.17	816.55
08/24	11:30 AM	1470	816.31	815.16	816.53
08/24	11:45 AM	1485	816.40	815.23	816.62
08/24	12:00 PM	1500	816.32	815.18	816.62
08/24	12:15 PM	1515	816.37	815.29	816.70
08/24	12:30 PM	1530	816.35	815.23	816.66
08/24	12:39 PM	1540	816.40	815.25	816.66
08/24	01:12:00 PM	0	816.40	815.59	816.56
08/24	01:12:20 PM	0.34	816.44	815.62	816.60
08/24	01:12:25 PM	0.42	816.44	815.62	816.60
08/24	01:12:30 PM	0.51	816.45	815.61	816.59
08/24	01:12:35 PM	0.59	816.45	815.61	816.59
08/24	01:12:40 PM	0.67	816.45	815.61	816.59
08/24	01:12:45 PM	0.76	816.45	815.60	816.59
08/24	01:12:50 PM	0.84	816.44	815.60	816.57
08/24	01:12:55 PM	0.92	816.44	815.59	816.57
08/24	01:13:00 PM	1.0	816.43	815.59	816.56
08/24	01:13:25 PM	1.4	816.40	815.58	816.59
08/24	01:13:45 PM	1.7	816.38	815.56	816.59
08/24	01:14:05 PM	2.1	816.36	815.56	816.60
08/24	01:14:25 PM	2.4	816.33	815.56	816.59
08/24	01:14:45 PM	2.7	816.29	815.56	816.60
08/24	01:15:05 PM	3.1	816.27	815.59	816.60
08/24	01:15:25 PM	3.4	816.25	815.61	816.60
08/24	01:15:45 PM	3.7	816.23	815.61	816.60
08/24	01:16:05 PM	4.1	816.23	815.61	816.59
08/24	01:16:25 PM	4.4	816.22	815.59	816.57
08/24	01:16:45 PM	4.7	816.22	815.57	816.57
08/24	01:17:05 PM	5.1	816.23	815.56	816.56
08/24	01:17:25 PM	5.4	816.21	815.56	816.55
08/24	01:17:45 PM	5.7	816.19	815.53	816.53
08/24	01:18:05 PM	6.1	816.17	815.51	816.53
08/24	01:18:25 PM	6.4	816.16	815.50	816.52
08/24	01:18:45 PM	6.7	816.12	815.49	816.52
08/24	01:19:05 PM	7.1	816.08	815.49	816.52
08/24	01:19:25 PM	7.4	816.06	815.48	816.52
08/24	01:19:45 PM	7.7	816.03	815.47	816.52
08/24	01:20:05 PM	8.1	816.01	815.48	816.56
08/24	01:20:25 PM	8.4	816.08	815.53	816.63

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/24	01:20:45 PM	8.7	816.15	815.53	816.65
08/24	01:21:05 PM	9.1	816.17	815.52	816.62
08/24	01:21:25 PM	9.4	816.11	815.45	816.55
08/24	01:21:45 PM	9.7	816.05	815.41	816.49
08/24	01:22 PM	10	816.01	815.37	816.46
08/24	01:24 PM	12	815.69	815.30	816.45
08/24	01:26 PM	14	815.55	815.17	816.33
08/24	01:28 PM	16	815.30	815.09	816.27
08/24	01:30 PM	18	815.10	815.02	816.26
08/24	01:32 PM	20	814.90	814.98	816.23
08/24	01:34 PM	22	814.76	814.88	816.16
08/24	01:36 PM	24	814.71	814.87	816.16
08/24	01:38 PM	26	814.71	814.83	816.09
08/24	01:40 PM	28	814.67	814.75	816.03
08/24	01:42 PM	30	814.55	814.73	816.01
08/24	01:44 PM	32	814.51	814.63	815.93
08/24	01:46 PM	34	814.38	814.60	815.87
08/24	01:48 PM	36	814.23	814.54	815.83
08/24	01:50 PM	38	814.22	814.52	815.78
08/24	01:52 PM	40	814.18	814.42	815.70
08/24	01:54 PM	42	814.05	814.39	815.64
08/24	01:56 PM	44	813.98	814.37	815.64
08/24	01:58 PM	46	813.94	814.29	815.57
08/24	02:00 PM	48	814.05	814.32	815.58
08/24	02:02 PM	50	813.97	814.33	815.55
08/24	02:04 PM	52	814.20	814.35	815.55
08/24	02:06 PM	54	814.22	814.28	815.40
08/24	02:08 PM	56	813.89	814.07	815.14
08/24	02:10 PM	58	813.59	814.09	815.20
08/24	02:12 PM	60	813.76	814.17	815.28
08/24	02:14 PM	62	813.86	814.15	815.24
08/24	02:16 PM	64	813.38	813.93	814.95
08/24	02:18 PM	66	813.64	814.09	815.18
08/24	02:20 PM	68	813.37	813.88	814.88
08/24	02:22 PM	70	813.12	813.89	814.88
08/24	02:24 PM	72	813.01	813.89	814.88
08/24	02:26 PM	74	813.20	813.96	814.99
08/24	02:28 PM	76	813.62	813.97	814.94
08/24	02:30 PM	78	813.26	813.81	814.69
08/24	02:32 PM	80	813.48	813.92	814.84
08/24	02:34 PM	82	813.52	813.85	814.71
08/24	02:36 PM	84	813.36	813.79	814.61
08/24	02:38 PM	86	813.14	813.74	814.58
08/24	02:40 PM	88	813.27	813.76	814.59
08/24	02:42 PM	90	813.18	813.65	814.41
08/24	02:44 PM	92	812.94	813.69	814.46

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
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WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/24	02:46 PM	94	813.16	813.71	814.51
08/24	02:48 PM	96	813.01	813.57	814.26
08/24	02:50 PM	98	812.66	813.58	814.23
08/24	02:52 PM	100	812.52	813.51	814.25
08/24	03:12 PM	120	812.76	813.42	813.95
08/24	03:32 PM	140	812.55	813.25	813.64
08/24	03:52 PM	160	812.54	813.17	813.43
08/24	04:12 PM	180	812.42	813.04	813.13
08/24	04:32 PM	200	812.45	813.05	813.14
08/24	04:52 PM	220	812.27	812.94	812.95
08/24	05:12 PM	240	812.23	812.86	812.78
08/24	05:32 PM	260	812.20	812.81	812.68
08/24	05:52 PM	280	812.22	812.76	812.60
08/24	06:12 PM	300	812.10	812.70	812.51
08/24	06:32 PM	320	811.97	812.65	812.42
08/24	06:52 PM	340	811.99	812.62	812.37
08/24	07:12 PM	360	811.94	812.58	812.29
08/24	07:32 PM	380	811.89	812.55	812.25
08/24	07:52 PM	400	811.85	812.51	812.19
08/24	08:12 PM	420	811.79	812.48	812.15
08/24	08:32 PM	440	811.77	812.44	812.11
08/24	08:52 PM	460	811.75	812.42	812.08
08/24	09:12 PM	480	811.72	812.39	812.04
Stop Pump -> 08/24	09:14 PM	482	811.72	812.39	812.04
08/24	09:17 PM	485.36	811.72	812.39	812.04
08/24	09:17 PM	485.44	811.72	812.39	812.04
08/24	09:17 PM	485.53	811.72	812.39	812.04
08/24	09:17 PM	485.61	811.72	812.38	812.04
08/24	09:17 PM	485.69	811.72	812.38	812.04
08/24	09:17 PM	485.78	811.72	812.39	812.04
08/24	09:17 PM	485.86	811.72	812.39	812.04
08/24	09:17 PM	485.94	811.72	812.39	812.04
08/24	09:18 PM	486.03	811.72	812.39	812.04
08/24	09:18 PM	486.43	811.73	812.39	812.04
08/24	09:18 PM	486.76	811.74	812.39	812.04
08/24	09:19 PM	487.10	811.76	812.39	812.04
08/24	09:19 PM	487.43	811.78	812.40	812.04
08/24	09:19 PM	487.76	811.80	812.40	812.04
08/24	09:20 PM	488.10	811.83	812.41	812.05
08/24	09:20 PM	488.43	811.85	812.42	812.05
08/24	09:20 PM	488.76	811.88	812.43	812.05
08/24	09:21 PM	489.10	811.92	812.43	812.06
08/24	09:21 PM	489.43	811.95	812.44	812.06
08/24	09:21 PM	489.76	811.98	812.46	812.08
08/24	09:22 PM	490.10	812.02	812.47	812.08
08/24	09:22 PM	490.43	812.06	812.49	812.09

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
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WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/24	09:22 PM	490.76	812.09	812.49	812.09
08/24	09:23 PM	491.10	812.13	812.51	812.11
08/24	09:23 PM	491.43	812.17	812.52	812.11
08/24	09:23 PM	491.76	812.21	812.54	812.12
08/24	09:24 PM	492.10	812.24	812.55	812.14
08/24	09:24 PM	492.43	812.28	812.56	812.14
08/24	09:24 PM	492.76	812.32	812.58	812.15
08/24	09:25 PM	493.10	812.35	812.59	812.16
08/24	09:25 PM	493.43	812.39	812.61	812.18
08/24	09:25 PM	493.76	812.42	812.62	812.18
08/24	09:26 PM	494.10	812.45	812.63	812.19
08/24	09:26 PM	494.43	812.49	812.65	812.21
08/24	09:26 PM	494.76	812.52	812.66	812.22
08/24	09:27 PM	495.10	812.55	812.68	812.24
08/24	09:29 PM	497	812.73	812.75	812.31
08/24	09:31 PM	499	812.88	812.82	812.41
08/24	09:33 PM	501	813.02	812.89	812.51
08/24	09:35 PM	503	813.18	812.97	812.64
08/24	09:37 PM	505	813.29	813.03	812.72
08/24	09:39 PM	507	813.40	813.09	812.83
08/24	09:41 PM	509	813.51	813.15	812.93
08/24	09:43 PM	511	813.60	813.20	813.03
08/24	09:45 PM	513	813.68	813.26	813.13
08/24	09:47 PM	515	813.75	813.32	813.21
08/24	09:49 PM	517	813.82	813.35	813.31
08/24	09:51 PM	519	813.89	813.40	813.40
08/24	09:53 PM	521	813.95	813.45	813.49
08/24	09:55 PM	523	814.01	813.49	813.56
08/24	09:57 PM	525	814.07	813.52	813.64
08/24	09:59 PM	527	814.12	813.57	813.72
08/24	10:01 PM	529	814.17	813.60	813.79
08/24	10:03 PM	531	814.21	813.64	813.85
08/24	10:05 PM	533	814.25	813.67	813.92
08/24	10:07 PM	535	814.28	813.70	813.97
08/24	10:09 PM	537	814.31	813.73	814.03
08/24	10:11 PM	539	814.36	813.77	814.10
08/24	10:13 PM	541	814.42	813.80	814.16
08/24	10:15 PM	543	814.47	813.83	814.22
08/24	10:17 PM	545	814.52	813.86	814.26
08/24	10:19 PM	547	814.56	813.90	814.32
08/24	10:21 PM	549	814.59	813.92	814.36
08/24	10:23 PM	551	814.63	813.95	814.41
08/24	10:25 PM	553	814.66	813.97	814.45
08/24	10:27 PM	555	814.69	814.00	814.49
08/24	10:29 PM	557	814.71	814.02	814.53
08/24	10:31 PM	559	814.74	814.05	814.58

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/24	10:33 PM	561	814.77	814.07	814.62
08/24	10:35 PM	563	814.79	814.09	814.65
08/24	10:37 PM	565	814.82	814.12	814.69
08/24	10:39 PM	567	814.84	814.14	814.72
08/24	10:41 PM	569	814.86	814.16	814.75
08/24	10:43 PM	571	814.89	814.19	814.79
08/24	10:45 PM	573	814.91	814.21	814.82
08/24	10:47 PM	575	814.94	814.22	814.85
08/24	10:49 PM	577	814.96	814.24	814.88
08/24	10:51 PM	579	814.98	814.26	814.91
08/24	10:53 PM	581	815.00	814.28	814.94
08/24	10:55 PM	583	815.02	814.30	814.97
08/24	11:17 PM	605	815.19	814.47	815.21
08/24	11:37 PM	625	815.39	814.61	815.41
08/24	11:57 PM	645	815.50	814.72	815.55
----->	12:00 AM		815.51	814.73	815.57
08/25	12:17 AM	665	815.59	814.82	815.67
08/25	12:37 AM	685	815.68	814.89	815.77
08/25	12:57 AM	705	815.75	814.97	815.87
08/25	01:17 AM	725	815.82	815.03	815.96
08/25	01:37 AM	745	815.88	815.09	816.01
08/25	01:57 AM	765	815.94	815.13	816.09
08/25	02:17 AM	785	815.99	815.17	816.13
08/25	02:37 AM	805	816.03	815.22	816.19
08/25	02:57 AM	825	816.06	815.25	816.23
08/25	03:17 AM	845	816.10	815.29	816.27
08/25	03:37 AM	865	816.14	815.31	816.32
08/25	03:57 AM	885	816.17	815.35	816.34
08/25	04:17 AM	905	816.19	815.37	816.37
08/25	04:37 AM	925	816.22	815.40	816.40
08/25	04:57 AM	945	816.25	815.43	816.43
08/25	05:17 AM	965	816.27	815.44	816.46
08/25	05:37 AM	985	816.29	815.46	816.49
08/25	05:57 AM	1005	816.30	815.48	816.50
08/25	06:17 AM	1025	816.31	815.49	816.52
08/25	06:37 AM	1045	816.32	815.50	816.55
08/25	06:57 AM	1065	816.32	815.51	816.56
08/25	07:17 AM	1085	816.33	815.52	816.57
08/25	07:37 AM	1105	816.35	815.53	816.59
08/25	07:57 AM	1125	816.34	815.55	816.60
08/25	08:17 AM	1145	816.33	815.56	816.62
08/25	08:37 AM	1165	816.35	815.56	816.63
08/25	08:57 AM	1185	816.32	815.56	816.63
End Recvry ->	09:17 AM	1205	816.40	815.56	816.66
08/25	09:37 AM	1225	815.25	815.07	816.29
08/25	09:57 AM	1245	814.68	814.75	815.88

DRAWNDOWN DATA FOR 4 LOWER AQUIFER WELLS  
AUGUST 22-23, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

DATE	TIME	Time (min)	MW-1D 841.73	MW-13D 830.49	MW-8D 831.03
08/25	10:17 AM	1265	814.33	814.52	815.48
08/25	10:37 AM	1285	814.16	814.26	815.09
08/25	10:57 AM	1305	813.63	813.95	814.76
08/25	11:17 AM	1325	813.31	813.76	814.45
08/25	11:37 AM	1345	813.39	813.75	814.20
08/25	11:57 AM	1365	813.49	813.75	814.06
----->	12:00 PM		813.48	813.74	814.03
08/25	12:17 PM	1385	813.44	813.66	813.87
08/25	12:37 PM	1405	813.66	813.55	813.82
08/25	12:57 PM	1425	812.73	813.31	813.50
08/25	01:17 PM	1445	812.77	813.32	813.39
08/25	01:37 PM	1465	813.01	813.37	813.28
08/25	01:57 PM	1485	813.34	813.40	813.34
08/25	02:57 PM	1545	812.74	813.15	813.10
08/25	03:57 PM	1605	813.07	813.21	813.03
08/25	04:57 PM	1665	812.38	813.00	812.93
08/25	05:57 PM	1725	814.33	813.78	813.96
08/25	06:57 PM	1785	815.17	814.45	815.11
08/25	07:57 PM	1845	815.56	814.80	815.61
08/25	08:57 PM	1905	815.81	815.03	815.88
08/25	09:57 PM	1965	815.96	815.16	816.07
08/25	10:57 PM	2025	816.06	815.26	816.22
----->	12:00 AM	2085	814.88	814.79	815.90
08/26	12:57 AM	2145	813.86	814.09	814.79
08/26	01:57 AM	2205	813.11	813.51	814.00
08/26	02:57 AM	2265	813.25	813.49	813.59
08/26	03:57 AM	2325	814.80	814.21	814.61
08/26	04:57 AM	2385	815.44	814.71	815.45
08/26	05:57 AM	2445	815.75	814.98	815.84
08/26	06:57 AM	2505	815.91	815.14	816.06
08/26	07:57 AM	2565	814.55	814.60	815.58
08/26	08:04 AM	2572	814.12	814.37	815.43
----->	12:00 PM				

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

Date	Time	Drawdown	REFERENCE 816.75
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-----> 08/23	12:00 PM		816.45
08/23	01:27 PM	0.20	816.55
08/23	01:42 PM	1.35	815.40
08/23	01:57 PM	1.83	814.92
08/23	02:12 PM	2.01	814.74
08/23	02:27 PM	2.46	814.29
08/23	02:42 PM	2.48	814.27
08/23	02:57 PM	2.66	814.09
08/23	03:12 PM	2.92	813.83
08/23	03:27 PM	2.81	813.94
08/23	03:42 PM	3.07	813.68
08/23	03:57 PM	3.14	813.61
08/23	04:12 PM	3.07	813.68
08/23	04:27 PM	3.36	813.39
08/23	04:42 PM	3.25	813.50
08/23	04:57 PM	3.34	813.41
08/23	05:12 PM	3.52	813.23
08/23	05:27 PM	3.34	813.41
08/23	05:42 PM	3.54	813.21
08/23	05:57 PM	3.58	813.17
08/23	06:12 PM	3.44	813.31
08/23	06:27 PM	3.69	813.06
08/23	06:42 PM	3.57	813.18
08/23	06:57 PM	3.57	813.18
08/23	07:12 PM	3.77	812.98
08/23	07:27 PM	3.58	813.17
08/23	07:42 PM	3.70	813.05
08/23	07:57 PM	3.80	812.95
08/23	08:12 PM	3.60	813.15
08/23	08:27 PM	3.80	812.95
08/23	08:42 PM	3.78	812.97
08/23	08:57 PM	3.54	813.21
08/23	09:12 PM	2.83	813.92
08/23	09:27 PM	2.38	814.37
08/23	09:42 PM	2.07	814.68
08/23	09:57 PM	1.81	814.94
08/23	10:12 PM	1.62	815.13
08/23	10:27 PM	1.46	815.29
08/23	10:42 PM	1.33	815.42
08/23	10:57 PM	1.23	815.52
08/23	11:12 PM	1.12	815.63
08/23	11:27 PM	1.04	815.71
08/23	11:42 PM	0.96	815.79
08/23	11:57 PM	0.89	815.86
08/24	12:12 AM	0.83	815.92

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

Date	Time	Drawdown	REFERENCE 816.75
-----	-----	-----	-----
08/24	12:27 AM	0.78	815.97
08/24	12:42 AM	0.73	816.02
08/24	12:57 AM	0.67	816.08
08/24	01:12 AM	0.64	816.11
08/24	01:27 AM	0.59	816.16
08/24	01:42 AM	0.54	816.21
08/24	01:57 AM	0.51	816.24
08/24	02:12 AM	0.47	816.28
08/24	02:27 AM	0.45	816.30
08/24	02:42 AM	0.42	816.33
08/24	02:57 AM	0.39	816.36
08/24	03:12 AM	0.37	816.38
08/24	03:27 AM	0.35	816.40
08/24	03:42 AM	0.32	816.43
08/24	03:57 AM	0.30	816.45
08/24	04:12 AM	0.28	816.47
08/24	04:27 AM	0.26	816.49
08/24	04:42 AM	0.24	816.51
08/24	04:57 AM	0.23	816.52
08/24	05:12 AM	0.22	816.53
08/24	05:27 AM	0.21	816.54
08/24	05:42 AM	0.19	816.56
08/24	05:57 AM	0.17	816.58
08/24	06:12 AM	0.74	816.01
08/24	06:27 AM	1.36	815.39
08/24	06:42 AM	1.94	814.81
08/24	06:57 AM	2.01	814.74
08/24	07:12 AM	2.33	814.42
08/24	07:27 AM	1.71	815.04
08/24	07:42 AM	1.32	815.43
08/24	07:57 AM	1.06	815.69
08/24	08:12 AM	0.89	815.86
08/24	08:27 AM	0.75	816.00
08/24	08:42 AM	0.66	816.09
08/24	08:57 AM	0.58	816.17
08/24	09:12 AM	0.51	816.24
08/24	09:27 AM	0.45	816.30
08/24	09:42 AM	0.39	816.36
08/24	09:57 AM	0.35	816.40
08/24	10:12 AM	0.32	816.43
08/24	10:27 AM	0.29	816.46
08/24	10:42 AM	0.27	816.48
08/24	10:57 AM	0.24	816.51
08/24	11:12 AM	0.22	816.53
08/24	11:27 AM	0.20	816.55
08/24	11:42 AM	0.17	816.58

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

	Date	Time	Drawdown	REFERENCE 816.75
	-----	-----	-----	-----
	08/24	11:57 AM	0.15	816.60
----->		12:00 PM	0.15	816.60
	08/24	12:12 PM	0.13	816.62
	08/24	12:27 PM	0.12	816.63
	08/24	12:42 PM	0.11	816.64
	08/24	12:57 PM	0.09	816.66
Start Pump -->	08/24	01:12 PM	0.64	816.11
	08/24	01:27 PM	1.65	815.10
	08/24	01:42 PM	2.23	814.52
	08/24	01:57 PM	2.61	814.14
	08/24	02:12 PM	2.91	813.84
	08/24	02:27 PM	3.11	813.64
	08/24	02:42 PM	3.32	813.43
	08/24	02:57 PM	3.47	813.28
	08/24	03:12 PM	3.58	813.17
	08/24	03:27 PM	3.69	813.06
	08/24	03:42 PM	3.78	812.97
	08/24	03:57 PM	3.87	812.88
	08/24	04:12 PM	3.95	812.80
	08/24	04:27 PM	4.02	812.73
	08/24	04:42 PM	4.09	812.66
	08/24	04:57 PM	4.15	812.60
	08/24	05:12 PM	4.19	812.56
	08/24	05:27 PM	4.24	812.51
	08/24	05:42 PM	4.30	812.45
	08/24	05:57 PM	4.33	812.42
	08/24	06:12 PM	4.37	812.38
	08/24	06:27 PM	4.40	812.35
	08/24	06:42 PM	4.44	812.31
	08/24	06:57 PM	4.47	812.28
	08/24	07:12 PM	4.49	812.26
	08/24	07:27 PM	4.53	812.22
	08/24	07:42 PM	4.55	812.20
	08/24	07:57 PM	4.59	812.16
	08/24	08:12 PM	4.61	812.14
	08/24	08:27 PM	4.63	812.12
	08/24	08:42 PM	4.66	812.09
	08/24	08:57 PM	4.68	812.07
Stop Pump --->	08/24	09:12 PM	4.31	812.44
	08/24	09:27 PM	3.32	813.43
	08/24	09:42 PM	2.72	814.03
	08/24	09:57 PM	2.31	814.44
	08/24	10:12 PM	2.01	814.74
	08/24	10:27 PM	1.78	814.97
	08/24	10:42 PM	1.60	815.15
	08/24	10:57 PM	1.43	815.32

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

	Date	Time	Drawdown	REFERENCE 816.75
	-----	-----	-----	-----
	08/24	11:12 PM	1.31	815.44
	08/24	11:27 PM	1.19	815.56
	08/24	11:42 PM	1.09	815.66
	08/24	11:57 PM	1.01	815.74
----->		12:00 AM	0.99	815.76
	08/25	12:12 AM	0.93	815.82
	08/25	12:27 AM	0.86	815.89
	08/25	12:42 AM	0.79	815.96
	08/25	12:57 AM	0.73	816.02
	08/25	01:12 AM	0.67	816.08
	08/25	01:27 AM	0.62	816.13
	08/25	01:42 AM	0.59	816.16
	08/25	01:57 AM	0.54	816.21
	08/25	02:12 AM	0.51	816.24
	08/25	02:27 AM	0.47	816.28
	08/25	02:42 AM	0.45	816.30
	08/25	02:57 AM	0.42	816.33
	08/25	03:12 AM	0.38	816.37
	08/25	03:27 AM	0.36	816.39
	08/25	03:42 AM	0.34	816.41
	08/25	03:57 AM	0.31	816.44
	08/25	04:12 AM	0.29	816.46
	08/25	04:27 AM	0.27	816.48
	08/25	04:42 AM	0.24	816.51
	08/25	04:57 AM	0.22	816.53
	08/25	05:12 AM	0.20	816.55
	08/25	05:27 AM	0.17	816.58
	08/25	05:42 AM	0.15	816.60
	08/25	05:57 AM	0.13	816.62
	08/25	06:12 AM	0.12	816.63
	08/25	06:27 AM	0.11	816.64
	08/25	06:42 AM	0.09	816.66
	08/25	06:57 AM	0.08	816.67
	08/25	07:12 AM	0.07	816.68
	08/25	07:27 AM	0.07	816.68
	08/25	07:42 AM	0.05	816.70
	08/25	07:57 AM	0.04	816.71
	08/25	08:12 AM	0.02	816.73
	08/25	08:27 AM	0.02	816.73
	08/25	08:42 AM	0.01	816.74
End Recovery -->	08/25	08:57 AM	0.00	816.75
	08/25	09:12 AM	0.22	816.53
	08/25	09:27 AM	1.27	815.48
	08/25	09:42 AM	1.56	815.19
	08/25	09:57 AM	2.00	814.75
	08/25	10:12 AM	2.35	814.40

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

Date	Time	Drawdown	REFERENCE 816.75
-----	-----	-----	-----
08/25	10:27 AM	2.35	814.40
08/25	10:42 AM	2.75	814.00
08/25	10:57 AM	2.72	814.03
08/25	11:12 AM	2.88	813.87
08/25	11:27 AM	3.11	813.64
08/25	11:42 AM	2.97	813.78
08/25	11:57 AM	3.28	813.47
----->	12:00 PM	3.26	813.49
08/25	12:12 PM	3.18	813.57
08/25	12:27 PM	3.25	813.50
08/25	12:42 PM	3.47	813.28
08/25	12:57 PM	3.28	813.47
08/25	01:12 PM	3.55	813.20
08/25	01:27 PM	3.45	813.30
08/25	01:42 PM	3.44	813.31
08/25	01:57 PM	3.66	813.09
08/25	02:12 PM	3.47	813.28
08/25	02:27 PM	3.65	813.10
08/25	02:42 PM	3.63	813.12
08/25	02:57 PM	3.56	813.19
08/25	03:12 PM	3.79	812.96
08/25	03:27 PM	3.60	813.15
08/25	03:42 PM	3.69	813.06
08/25	03:57 PM	3.81	812.94
08/25	04:12 PM	3.60	813.15
08/25	04:27 PM	3.82	812.93
08/25	04:42 PM	3.78	812.97
08/25	04:57 PM	3.67	813.08
08/25	05:12 PM	3.64	813.11
08/25	05:27 PM	2.92	813.83
08/25	05:42 PM	2.42	814.33
08/25	05:57 PM	2.06	814.69
08/25	06:12 PM	1.79	814.96
08/25	06:27 PM	1.57	815.18
08/25	06:42 PM	1.41	815.34
08/25	06:57 PM	1.27	815.48
08/25	07:12 PM	1.16	815.59
08/25	07:27 PM	1.05	815.70
08/25	07:42 PM	0.96	815.79
08/25	07:57 PM	0.89	815.86
08/25	08:12 PM	0.82	815.93
08/25	08:27 PM	0.75	816.00
08/25	08:42 PM	0.71	816.04
08/25	08:57 PM	0.65	816.10
08/25	09:12 PM	0.60	816.15
08/25	09:27 PM	0.56	816.19

DRAWDOWN DATA FROM PH WELL  
AUGUST 23-24, 1988  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

Date	Time	Drawdown	REFERENCE 816.75
08/25	09:42 PM	0.51	816.24
08/25	09:57 PM	0.47	816.28
08/25	10:12 PM	0.45	816.30
08/25	10:27 PM	0.43	816.32
08/25	10:42 PM	0.39	816.36
08/25	10:57 PM	0.36	816.39
08/25	11:12 PM	0.34	816.41
08/25	11:27 PM	0.47	816.28
08/25	11:42 PM	1.47	815.28
08/25	11:57 PM	1.77	814.98
----->	12:00 AM	1.85	814.90
08/26	12:12 AM	2.15	814.60
08/26	12:27 AM	2.53	814.22
08/26	12:42 AM	2.48	814.27
08/26	12:57 AM	2.84	813.91
08/26	01:12 AM	2.90	813.85
08/26	01:27 AM	2.89	813.86
08/26	01:42 AM	3.22	813.53
08/26	01:57 AM	3.05	813.70
08/26	02:12 AM	3.27	813.48
08/26	02:27 AM	3.34	813.41
08/26	02:42 AM	3.22	813.53
08/26	02:57 AM	3.28	813.47
08/26	03:12 AM	2.58	814.17
08/26	03:27 AM	2.09	814.66
08/26	03:42 AM	1.75	815.00
08/26	03:57 AM	1.50	815.25
08/26	04:12 AM	1.33	815.42
08/26	04:27 AM	1.17	815.58
08/26	04:42 AM	1.04	815.71
08/26	04:57 AM	0.95	815.80
08/26	05:12 AM	0.87	815.88
08/26	05:27 AM	0.79	815.96
08/26	05:42 AM	0.71	816.04
08/26	05:57 AM	0.65	816.10
08/26	06:12 AM	0.61	816.14
08/26	06:27 AM	0.57	816.18
08/26	06:42 AM	0.53	816.22
08/26	06:57 AM	0.49	816.26
08/26	07:12 AM	0.46	816.29
----->	08/27 12:00 AM		

DRAWNDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

08/26	07:08 AM	3975	30.19	0.19	815.04
Date	Time	Data	Drawdown		
08/23	02:20 PM				
08/23	02:35 PM				
08/23	02:50 PM				
08/23	03:05 PM	4.6	0		
08/23	03:20 PM	4.69	0.09		
08/23	03:35 PM	4.68	0.08		
08/23	03:50 PM	4.67	0.07		
08/23	04:05 PM	4.65	0.05		
08/23	04:20 PM	4.64	0.04		
08/23	04:35 PM	4.64	0.04		
08/23	04:50 PM	4.63	0.03		
08/23	05:05 PM	4.63	0.03		
08/23	05:20 PM	4.62	0.02		
08/23	05:35 PM	4.62	0.02		
08/23	05:50 PM	4.62	0.02		
08/23	06:05 PM	4.62	0.02		
08/23	06:20 PM	4.62	0.02		
08/23	06:35 PM	4.61	0.01		
08/23	06:50 PM	4.61	0.01		
08/23	07:05 PM	4.61	0.01		
08/23	07:20 PM	4.61	0.01		
08/23	07:35 PM	4.61	0.01		
08/23	07:50 PM	4.61	0.01		
08/23	08:05 PM	4.61	0.01		
08/23	08:20 PM	4.61	0.01		
08/23	08:35 PM	4.61	0.01		
08/23	08:50 PM	4.6	0		
08/23	09:05 PM	4.61	0.01		
08/23	09:20 PM	4.61	0.01		
08/23	09:35 PM	4.61	0.01		
08/23	09:50 PM	4.62	0.02		
08/23	10:05 PM	4.61	0.01		
08/23	10:20 PM	4.62	0.02		
08/23	10:35 PM	4.62	0.02		
08/23	10:50 PM	4.62	0.02		
08/23	11:05 PM	4.62	0.02		
08/23	11:20 PM	4.62	0.02		
08/23	11:35 PM	4.63	0.03		
08/23	11:50 PM	4.63	0.03		
08/24	12:05 AM	4.63	0.03		
08/24	12:20 AM	4.63	0.03		
08/24	12:35 AM	4.63	0.03		
08/24	12:50 AM	4.63	0.03		
08/24	01:05 AM	4.64	0.04		
08/24	01:20 AM	4.64	0.04		

DRAWDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

08/26	07:08 AM	3975	30.19	0.19	815.04
Date	Time	Data	Drawdown		
-----	-----	-----	-----		
08/24	01:35 AM	4.64	0.04		
08/24	01:50 AM	4.64	0.04		
08/24	02:05 AM	4.64	0.04		
08/24	02:20 AM	4.64	0.04		
08/24	02:35 AM	4.64	0.04		
08/24	02:50 AM	4.64	0.04		
08/24	03:05 AM	4.63	0.03		
08/24	03:20 AM	4.62	0.02		
08/24	03:35 AM	4.62	0.02		
08/24	03:50 AM	4.62	0.02		
08/24	04:05 AM	4.63	0.03		
08/24	04:20 AM	4.63	0.03		
08/24	04:35 AM	4.63	0.03		
08/24	04:50 AM	4.62	0.02		
08/24	05:05 AM	4.61	0.01		
08/24	05:20 AM	4.61	0.01		
08/24	05:35 AM	4.61	0.01		
08/24	05:50 AM	4.61	0.01		
08/24	06:05 AM	4.61	0.01		
08/24	06:20 AM	4.61	0.01		
08/24	06:35 AM	4.61	0.01		
08/24	06:50 AM	4.62	0.02		
08/24	07:05 AM	4.62	0.02		
08/24	07:20 AM	4.62	0.02		
08/24	07:35 AM	4.62	0.02		
08/24	07:50 AM	4.62	0.02		
08/24	08:05 AM	4.63	0.03		
08/24	08:20 AM	4.63	0.03		
08/24	08:35 AM	4.63	0.03		
08/24	08:50 AM	4.63	0.03		
08/24	09:05 AM	4.62	0.02		
08/24	09:20 AM	4.63	0.03		
08/24	09:35 AM	4.62	0.02		
08/24	09:50 AM	4.63	0.03		
08/24	10:05 AM	4.63	0.03		
08/24	10:20 AM	4.65	0.05		
08/24	10:35 AM	4.67	0.07		
08/24	10:50 AM	4.68	0.08		
08/24	11:05 AM	4.65	0.05		
08/24	11:20 AM	4.65	0.05		
08/24	11:35 AM	4.65	0.05		
08/24	11:50 AM	4.64	0.04		
08/24	12:05 PM	4.65	0.05		
08/24	12:20 PM	4.64	0.04		
08/24	12:35 PM	4.64	0.04		
08/24	12:50 PM	4.64	0.04		

DRAWNDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

	08/26 Date	07:08 AM Time	3975 Data	30.19 Drawdown	0.19	815.04
	08/24	01:05 PM	4.65	0.05		
Start Pump --->	08/24	01:20 PM	4.65	0.05		
	08/24	01:35 PM	4.65	0.05		
	08/24	01:50 PM	4.65	0.05		
	08/24	02:05 PM	4.65	0.05		
	08/24	02:20 PM	4.65	0.05		
	08/24	02:35 PM	4.65	0.05		
	08/24	02:50 PM	4.65	0.05		
	08/24	03:05 PM	4.64	0.04		
	08/24	03:20 PM	4.65	0.05		
	08/24	03:35 PM	4.64	0.04		
	08/24	03:50 PM	4.64	0.04		
	08/24	04:05 PM	4.64	0.04		
	08/24	04:20 PM	4.64	0.04		
	08/24	04:35 PM	4.64	0.04		
	08/24	04:50 PM	4.64	0.04		
	08/24	05:05 PM	4.64	0.04		
	08/24	05:20 PM	4.64	0.04		
	08/24	05:35 PM	4.64	0.04		
	08/24	05:50 PM	4.64	0.04		
	08/24	06:05 PM	4.64	0.04		
	08/24	06:20 PM	4.64	0.04		
	08/24	06:35 PM	4.64	0.04		
	08/24	06:50 PM	4.64	0.04		
	08/24	07:05 PM	4.64	0.04		
	08/24	07:20 PM	4.64	0.04		
	08/24	07:35 PM	4.64	0.04		
	08/24	07:50 PM	4.63	0.03		
	08/24	08:05 PM	4.63	0.03		
	08/24	08:20 PM	4.63	0.03		
	08/24	08:35 PM	4.63	0.03		
	08/24	08:50 PM	4.63	0.03		
	08/24	09:05 PM	4.63	0.03		
Stop Pump --->	08/24	09:20 PM	4.64	0.04		
	08/24	09:35 PM	4.64	0.04		
	08/24	09:50 PM	4.64	0.04		
	08/24	10:05 PM	4.64	0.04		
	08/24	10:20 PM	4.64	0.04		
	08/24	10:35 PM	4.64	0.04		
	08/24	10:50 PM	4.65	0.05		
	08/24	11:05 PM	4.65	0.05		
	08/24	11:20 PM	4.64	0.04		
	08/24	11:35 PM	4.63	0.03		
	08/24	11:50 PM	4.63	0.03		
	08/25	12:05 AM	4.64	0.04		
	08/25	12:20 AM	4.64	0.04		

DRAWDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

08/26	07:08 AM	3975	30.19	0.19	815.04
Date	Time	Data	Drawdown		
08/25	12:35 AM	4.64	0.04		
08/25	12:50 AM	4.64	0.04		
08/25	01:05 AM	4.64	0.04		
08/25	01:20 AM	4.64	0.04		
08/25	01:35 AM	4.63	0.03		
08/25	01:50 AM	4.63	0.03		
08/25	02:05 AM	4.62	0.02		
08/25	02:20 AM	4.62	0.02		
08/25	02:35 AM	4.62	0.02		
08/25	02:50 AM	4.61	0.01		
08/25	03:05 AM	4.61	0.01		
08/25	03:20 AM	4.62	0.02		
08/25	03:35 AM	4.62	0.02		
08/25	03:50 AM	4.62	0.02		
08/25	04:05 AM	4.62	0.02		
08/25	04:20 AM	4.62	0.02		
08/25	04:35 AM	4.62	0.02		
08/25	04:50 AM	4.63	0.03		
08/25	05:05 AM	4.63	0.03		
08/25	05:20 AM	4.63	0.03		
08/25	05:35 AM	4.62	0.02		
08/25	05:50 AM	4.62	0.02		
08/25	06:05 AM	4.62	0.02		
08/25	06:20 AM	4.61	0.01		
08/25	06:35 AM	4.63	0.03		
08/25	06:50 AM	4.63	0.03		
08/25	07:05 AM	4.62	0.02		
08/25	07:20 AM	4.63	0.03		
08/25	07:35 AM	4.62	0.02		
08/25	07:50 AM	4.62	0.02		
08/25	08:05 AM	4.62	0.02		
08/25	08:20 AM	4.62	0.02		
08/25	08:35 AM	4.62	0.02		
End Recovery --->	08/25 08:50 AM	4.62	0.02		
	08/25 09:05 AM	4.62	0.02		
	08/25 09:20 AM	4.62	0.02		
	08/25 09:35 AM	4.62	0.02		
	08/25 09:50 AM	4.63	0.03		
	08/25 10:05 AM	4.64	0.04		
	08/25 10:20 AM	4.64	0.04		
	08/25 10:35 AM	4.65	0.05		
	08/25 10:50 AM	4.64	0.04		
	08/25 11:05 AM	4.64	0.04		
	08/25 11:20 AM	4.63	0.03		
	08/25 11:35 AM	4.63	0.03		
	08/25 11:50 AM	4.63	0.03		

DRAWNDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

08/26	07:08 AM	3975	30.19	0.19	815.04
Date	Time	Data	Drawdown		
-----	-----	-----	-----		
08/25	12:05 PM	4.62	0.02		
08/25	12:20 PM	4.62	0.02		
08/25	12:35 PM	4.62	0.02		
08/25	12:50 PM	4.62	0.02		
08/25	01:05 PM	4.62	0.02		
08/25	01:20 PM	4.63	0.03		
08/25	01:35 PM	4.62	0.02		
08/25	01:50 PM	4.63	0.03		
08/25	02:05 PM	4.62	0.02		
08/25	02:20 PM	4.62	0.02		
08/25	02:35 PM	4.62	0.02		
08/25	02:50 PM	4.61	0.01		
08/25	03:05 PM	4.61	0.01		
08/25	03:20 PM	4.61	0.01		
08/25	03:35 PM	4.61	0.01		
08/25	03:50 PM	4.61	0.01		
08/25	04:05 PM	4.61	0.01		
08/25	04:20 PM	4.61	0.01		
08/25	04:35 PM	4.61	0.01		
08/25	04:50 PM	4.61	0.01		
08/25	05:05 PM	4.61	0.01		
08/25	05:20 PM	4.61	0.01		
08/25	05:35 PM	4.61	0.01		
08/25	05:50 PM	4.61	0.01		
08/25	06:05 PM	4.61	0.01		
08/25	06:20 PM	4.61	0.01		
08/25	06:35 PM	4.61	0.01		
08/25	06:50 PM	4.61	0.01		
08/25	07:05 PM	4.61	0.01		
08/25	07:20 PM	4.61	0.01		
08/25	07:35 PM	4.61	0.01		
08/25	07:50 PM	4.61	0.01		
08/25	08:05 PM	4.61	0.01		
08/25	08:20 PM	4.6	0		
08/25	08:35 PM	4.61	0.01		
08/25	08:50 PM	4.61	0.01		
08/25	09:05 PM	4.62	0.02		
08/25	09:20 PM	4.63	0.03		
08/25	09:35 PM	4.63	0.03		
08/25	09:50 PM	4.64	0.04		
08/25	10:05 PM	4.64	0.04		
08/25	10:20 PM	4.64	0.04		
08/25	10:35 PM	4.63	0.03		
08/25	10:50 PM	4.63	0.03		
08/25	11:05 PM	4.65	0.05		
08/25	11:20 PM	4.65	0.05		

DRAWDOWN DATA FROM MONITORING WELL MW-9  
WRR RI/FS SITE  
COLUMBIA CITY, INDIANA

08/26	07:08 AM	3975	30.19	0.19	815.04
Date	Time	Data	Drawdown		
-----	-----	-----	-----		
08/25	11:35 PM	4.64	0.04		
08/25	11:50 PM	4.63	0.03		
08/26	12:05 AM	4.63	0.03		
08/26	12:20 AM	4.63	0.03		
08/26	12:35 AM	4.64	0.04		
08/26	12:50 AM	4.64	0.04		
08/26	01:05 AM	4.64	0.04		
08/26	01:20 AM	4.64	0.04		
08/26	01:35 AM	4.63	0.03		
08/26	01:50 AM	4.61	0.01		
08/26	02:05 AM	4.62	0.02		
08/26	02:20 AM	4.62	0.02		
08/26	02:35 AM	4.62	0.02		
08/26	02:50 AM	4.61	0.01		
08/26	03:05 AM	4.62	0.02		
08/26	03:20 AM	4.62	0.02		
08/26	03:35 AM	4.62	0.02		
08/26	03:50 AM	4.63	0.03		
08/26	04:05 AM	4.63	0.03		
08/26	04:20 AM	4.62	0.02		
08/26	04:35 AM	4.62	0.02		
08/26	04:50 AM	4.61	0.01		
08/26	05:05 AM	4.62	0.02		
08/26	05:20 AM	4.62	0.02		
08/26	05:35 AM	4.61	0.01		
08/26	05:50 AM	4.61	0.01		
08/26	06:05 AM	4.62	0.02		
08/26	06:20 AM	4.61	0.01		
08/26	06:35 AM	4.61	0.01		
08/26	06:50 AM	4.61	0.01		
08/26	07:05 AM	4.61	0.01		
08/26	07:20 AM	4.61	0.01		
08/26	07:35 AM	4.61	0.01		
08/26	07:50 AM	4.6	0		
08/26	08:05 AM	4.61	0.01		

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

Date	Time	Elapsed Time	Data	Drawdown	845.42 Elevation
-----	-----	-----	-----	-----	-----
08/23	12:53 PM	0	30.11	0.11	815.12
08/23	01:08 PM	15	30.10	0.10	815.13
08/23	01:23 PM	30	30.09	0.09	815.14
08/23	01:38 PM	45	30.08	0.08	815.15
08/23	01:53 PM	60	30.07	0.07	815.16
08/23	02:08 PM	75	30.06	0.06	815.17
08/23	02:23 PM	90	30.07	0.07	815.16
08/23	02:38 PM	105	30.06	0.06	815.17
08/23	02:53 PM	120	30.07	0.07	815.16
08/23	03:08 PM	135	30.07	0.07	815.16
08/23	03:23 PM	150	30.07	0.07	815.16
08/23	03:38 PM	165	30.07	0.07	815.16
08/23	03:53 PM	180	30.08	0.08	815.15
08/23	04:08 PM	195	30.08	0.08	815.15
08/23	04:23 PM	210	30.08	0.08	815.15
08/23	04:38 PM	225	30.08	0.08	815.15
08/23	04:53 PM	240	30.09	0.09	815.14
08/23	05:08 PM	255	30.09	0.09	815.14
08/23	05:23 PM	270	30.10	0.10	815.13
08/23	05:38 PM	285	30.10	0.10	815.13
08/23	05:53 PM	300	30.11	0.11	815.12
08/23	06:08 PM	315	30.11	0.11	815.12
08/23	06:23 PM	330	30.11	0.11	815.12
08/23	06:38 PM	345	30.12	0.12	815.11
08/23	06:53 PM	360	30.12	0.12	815.11
08/23	07:08 PM	375	30.13	0.13	815.10
08/23	07:23 PM	390	30.13	0.13	815.10
08/23	07:38 PM	405	30.14	0.14	815.09
08/23	07:53 PM	420	30.14	0.14	815.09
08/23	08:08 PM	435	30.15	0.15	815.08
08/23	08:23 PM	450	30.15	0.15	815.08
08/23	08:38 PM	465	30.16	0.16	815.07
08/23	08:53 PM	480	30.16	0.16	815.07
08/23	09:08 PM	495	30.17	0.17	815.06
08/23	09:23 PM	510	30.17	0.17	815.06
08/23	09:38 PM	525	30.17	0.17	815.06
08/23	09:53 PM	540	30.17	0.17	815.06
08/23	10:08 PM	555	30.17	0.17	815.06
08/23	10:23 PM	570	30.17	0.17	815.06
08/23	10:38 PM	585	30.17	0.17	815.06
08/23	10:53 PM	600	30.16	0.16	815.07
08/23	11:08 PM	615	30.16	0.16	815.07
08/23	11:23 PM	630	30.16	0.16	815.07
08/23	11:38 PM	645	30.16	0.16	815.07
08/23	11:53 PM	660	30.16	0.16	815.07

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

Date	Time	Elapsed Time	Data	Drawdown	845.42 Elevation
08/24	12:08 AM	675	30.15	0.15	815.08
08/24	12:23 AM	690	30.15	0.15	815.08
08/24	12:38 AM	705	30.15	0.15	815.08
08/24	12:53 AM	720	30.15	0.15	815.08
08/24	01:08 AM	735	30.14	0.14	815.09
08/24	01:23 AM	750	30.14	0.14	815.09
08/24	01:38 AM	765	30.14	0.14	815.09
08/24	01:53 AM	780	30.13	0.13	815.10
08/24	02:08 AM	795	30.13	0.13	815.10
08/24	02:23 AM	810	30.13	0.13	815.10
08/24	02:38 AM	825	30.13	0.13	815.10
08/24	02:53 AM	840	30.13	0.13	815.10
08/24	03:08 AM	855	30.12	0.12	815.11
08/24	03:23 AM	870	30.12	0.12	815.11
08/24	03:38 AM	885	30.11	0.11	815.12
08/24	03:53 AM	900	30.11	0.11	815.12
08/24	04:08 AM	915	30.11	0.11	815.12
08/24	04:23 AM	930	30.11	0.11	815.12
08/24	04:38 AM	945	30.11	0.11	815.12
08/24	04:53 AM	960	30.10	0.10	815.13
08/24	05:08 AM	975	30.10	0.10	815.13
08/24	05:23 AM	990	30.10	0.10	815.13
08/24	05:38 AM	1005	30.09	0.09	815.14
08/24	05:53 AM	1020	30.09	0.09	815.14
08/24	06:08 AM	1035	30.08	0.08	815.15
08/24	06:23 AM	1050	30.08	0.08	815.15
08/24	06:38 AM	1065	30.08	0.08	815.15
08/24	06:53 AM	1080	30.08	0.08	815.15
08/24	07:08 AM	1095	30.09	0.09	815.14
08/24	07:23 AM	1110	30.09	0.09	815.14
08/24	07:38 AM	1125	30.09	0.09	815.14
08/24	07:53 AM	1140	30.09	0.09	815.14
08/24	08:08 AM	1155	30.09	0.09	815.14
08/24	08:23 AM	1170	30.08	0.08	815.15
08/24	08:38 AM	1185	30.08	0.08	815.15
08/24	08:53 AM	1200	30.08	0.08	815.15
08/24	09:08 AM	1215	30.08	0.08	815.15
08/24	09:23 AM	1230	30.08	0.08	815.15
08/24	09:38 AM	1245	30.08	0.08	815.15
08/24	09:53 AM	1260	30.08	0.08	815.15
08/24	10:08 AM	1275	30.08	0.08	815.15
08/24	10:23 AM	1290	30.07	0.07	815.16
08/24	10:38 AM	1305	30.07	0.07	815.16
08/24	10:53 AM	1320	30.06	0.06	815.17
08/24	11:08 AM	1335	30.06	0.06	815.17
08/24	11:23 AM	1350	30.06	0.06	815.17
08/24	11:38 AM	1365	30.05	0.05	815.18

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

		Elapsed			845.42
Date	Time	Time	Data	Drawdown	Elevation
<hr/>					
08/24	11:53 AM	1380	30.04	0.04	815.19
	12:00 PM	1387	30.04	0.04	815.19
08/24	12:08 PM	1395	30.04	0.04	815.19
08/24	12:23 PM	1410	30.03	0.03	815.20
08/24	12:38 PM	1425	30.03	0.03	815.20
08/24	12:53 PM	1440	30.03	0.03	815.20
08/24	01:08 PM	1455	30.03	0.03	815.20
Pump On -->	01:23 PM	1470	30.02	0.02	815.21
08/24	01:38 PM	1485	30.03	0.03	815.20
08/24	01:53 PM	1500	30.03	0.03	815.20
08/24	02:08 PM	1515	30.02	0.02	815.21
08/24	02:23 PM	1530	30.03	0.03	815.20
08/24	02:38 PM	1545	30.03	0.03	815.20
08/24	02:53 PM	1560	30.05	0.05	815.18
08/24	03:08 PM	1575	30.05	0.05	815.18
08/24	03:23 PM	1590	30.05	0.05	815.18
08/24	03:38 PM	1605	30.06	0.06	815.17
08/24	03:53 PM	1620	30.06	0.06	815.17
08/24	04:08 PM	1635	30.06	0.06	815.17
08/24	04:23 PM	1650	30.08	0.08	815.15
08/24	04:38 PM	1665	30.08	0.08	815.15
08/24	04:53 PM	1680	30.09	0.09	815.14
08/24	05:08 PM	1695	30.10	0.10	815.13
08/24	05:23 PM	1710	30.10	0.10	815.13
08/24	05:38 PM	1725	30.11	0.11	815.12
08/24	05:53 PM	1740	30.11	0.11	815.12
08/24	06:08 PM	1755	30.12	0.12	815.11
08/24	06:23 PM	1770	30.13	0.13	815.10
08/24	06:38 PM	1785	30.15	0.15	815.08
08/24	06:53 PM	1800	30.15	0.15	815.08
08/24	07:08 PM	1815	30.15	0.15	815.08
08/24	07:23 PM	1830	30.16	0.16	815.07
08/24	07:38 PM	1845	30.17	0.17	815.06
08/24	07:53 PM	1860	30.18	0.18	815.05
08/24	08:08 PM	1875	30.19	0.19	815.04
08/24	08:23 PM	1890	30.19	0.19	815.04
08/24	08:38 PM	1905	30.19	0.19	815.04
08/24	08:53 PM	1920	30.19	0.19	815.04
08/24	09:08 PM	1935	30.21	0.21	815.02
Pump Off -->	09:23 PM	1950	30.21	0.21	815.02
08/24	09:38 PM	1965	30.21	0.21	815.02
08/24	09:53 PM	1980	30.21	0.21	815.02
08/24	10:08 PM	1995	30.21	0.21	815.02
08/24	10:23 PM	2010	30.21	0.21	815.02
08/24	10:38 PM	2025	30.21	0.21	815.02
08/24	10:53 PM	2040	30.19	0.19	815.04
08/24	11:08 PM	2055	30.19	0.19	815.04

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

Date	Time	Elapsed Time	Data	Drawdown	845.42 Elevation
08/24	11:23 PM	2070	30.19	0.19	815.04
08/24	11:38 PM	2085	30.19	0.19	815.04
08/24	11:53 PM	2100	30.19	0.19	815.04
08/25	12:08 AM	2115	30.19	0.19	815.04
08/25	12:23 AM	2130	30.19	0.19	815.04
08/25	12:38 AM	2145	30.19	0.19	815.04
08/25	12:53 AM	2160	30.19	0.19	815.04
08/25	01:08 AM	2175	30.18	0.18	815.05
08/25	01:23 AM	2190	30.18	0.18	815.05
08/25	01:38 AM	2205	30.18	0.18	815.05
08/25	01:53 AM	2220	30.17	0.17	815.06
08/25	02:08 AM	2235	30.17	0.17	815.06
08/25	02:23 AM	2250	30.17	0.17	815.06
08/25	02:38 AM	2265	30.17	0.17	815.06
08/25	02:53 AM	2280	30.16	0.16	815.07
08/25	03:08 AM	2295	30.16	0.16	815.07
08/25	03:23 AM	2310	30.15	0.15	815.08
08/25	03:38 AM	2325	30.15	0.15	815.08
08/25	03:53 AM	2340	30.15	0.15	815.08
08/25	04:08 AM	2355	30.14	0.14	815.09
08/25	04:23 AM	2370	30.14	0.14	815.09
08/25	04:38 AM	2385	30.13	0.13	815.10
08/25	04:53 AM	2400	30.14	0.14	815.09
08/25	05:08 AM	2415	30.13	0.13	815.10
08/25	05:23 AM	2430	30.13	0.13	815.10
08/25	05:38 AM	2445	30.13	0.13	815.10
08/25	05:53 AM	2460	30.12	0.12	815.11
08/25	06:08 AM	2475	30.12	0.12	815.11
08/25	06:23 AM	2490	30.11	0.11	815.12
08/25	06:38 AM	2505	30.11	0.11	815.12
08/25	06:53 AM	2520	30.10	0.10	815.13
08/25	07:08 AM	2535	30.10	0.10	815.13
08/25	07:23 AM	2550	30.10	0.10	815.13
08/25	07:38 AM	2565	30.10	0.10	815.13
08/25	07:53 AM	2580	30.09	0.09	815.14
08/25	08:08 AM	2595	30.09	0.09	815.14
08/25	08:23 AM	2610	30.08	0.08	815.15
08/25	08:38 AM	2625	30.08	0.08	815.15
08/25	08:53 AM	2640	30.08	0.08	815.15
End Recvry -->	09:08 AM	2655	30.08	0.08	815.15
08/25	09:23 AM	2670	30.08	0.08	815.15
08/25	09:38 AM	2685	30.08	0.08	815.15
08/25	09:53 AM	2700	30.09	0.09	815.14
08/25	10:08 AM	2715	30.09	0.09	815.14
08/25	10:23 AM	2730	30.08	0.08	815.15
08/25	10:38 AM	2745	30.09	0.09	815.14
08/25	10:53 AM	2760	30.09	0.09	815.14

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

Date	Time	Elapsed Time	Data	Drawdown	845.42 Elevation
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08/25	11:08 AM	2775	30.09	0.09	815.14
08/25	11:23 AM	2790	30.10	0.10	815.13
08/25	11:38 AM	2805	30.10	0.10	815.13
08/25	11:53 AM	2820	30.11	0.11	815.12
	12:00 PM	2827	30.11	0.11	815.12
08/25	12:08 PM	2835	30.11	0.11	815.12
08/25	12:23 PM	2850	30.12	0.12	815.11
08/25	12:38 PM	2865	30.10	0.10	815.13
08/25	12:53 PM	2880	30.12	0.12	815.11
08/25	01:08 PM	2895	30.12	0.12	815.11
08/25	01:23 PM	2910	30.13	0.13	815.10
08/25	01:38 PM	2925	30.13	0.13	815.10
08/25	01:53 PM	2940	30.13	0.13	815.10
08/25	02:08 PM	2955	30.14	0.14	815.09
08/25	02:23 PM	2970	30.14	0.14	815.09
08/25	02:38 PM	2985	30.14	0.14	815.09
08/25	02:53 PM	3000	30.15	0.15	815.08
08/25	03:08 PM	3015	30.15	0.15	815.08
08/25	03:23 PM	3030	30.16	0.16	815.07
08/25	03:38 PM	3045	30.17	0.17	815.06
08/25	03:53 PM	3060	30.17	0.17	815.06
08/25	04:08 PM	3075	30.18	0.18	815.05
08/25	04:23 PM	3090	30.18	0.18	815.05
08/25	04:38 PM	3105	30.19	0.19	815.04
08/25	04:53 PM	3120	30.19	0.19	815.04
08/25	05:08 PM	3135	30.19	0.19	815.04
08/25	05:23 PM	3150	30.21	0.21	815.02
08/25	05:38 PM	3165	30.21	0.21	815.02
08/25	05:53 PM	3180	30.21	0.21	815.02
08/25	06:08 PM	3195	30.21	0.21	815.02
08/25	06:23 PM	3210	30.21	0.21	815.02
08/25	06:38 PM	3225	30.21	0.21	815.02
08/25	06:53 PM	3240	30.21	0.21	815.02
08/25	07:08 PM	3255	30.21	0.21	815.02
08/25	07:23 PM	3270	30.21	0.21	815.02
08/25	07:38 PM	3285	30.19	0.19	815.04
08/25	07:53 PM	3300	30.19	0.19	815.04
08/25	08:08 PM	3315	30.19	0.19	815.04
08/25	08:23 PM	3330	30.19	0.19	815.04
08/25	08:38 PM	3345	30.19	0.19	815.04
08/25	08:53 PM	3360	30.19	0.19	815.04
08/25	09:08 PM	3375	30.19	0.19	815.04
08/25	09:23 PM	3390	30.19	0.19	815.04
08/25	09:38 PM	3405	30.19	0.19	815.04
08/25	09:53 PM	3420	30.18	0.18	815.05
08/25	10:08 PM	3435	30.18	0.18	815.05
08/25	10:23 PM	3450	30.17	0.17	815.06

DRAWNDOWN DATA FROM MONITORING WELL  
WRR RI/FS SITE  
COLUMBIA CITY INDIANA

Date	Time	Elapsed Time	Data	Drawdown	845.42 Elevation
-----	-----	-----	-----	-----	-----
08/25	10:38 PM	3465	30.18	0.18	815.05
08/25	10:53 PM	3480	30.17	0.17	815.06
08/25	11:08 PM	3495	30.16	0.16	815.07
08/25	11:23 PM	3510	30.16	0.16	815.07
08/25	11:38 PM	3525	30.16	0.16	815.07
08/25	11:53 PM	3540	30.15	0.15	815.08
08/26	12:08 AM	3555	30.15	0.15	815.08
08/26	12:23 AM	3570	30.16	0.16	815.07
08/26	12:38 AM	3585	30.16	0.16	815.07
08/26	12:53 AM	3600	30.16	0.16	815.07
08/26	01:08 AM	3615	30.17	0.17	815.06
08/26	01:23 AM	3630	30.17	0.17	815.06
08/26	01:38 AM	3645	30.18	0.18	815.05
08/26	01:53 AM	3660	30.19	0.19	815.04
08/26	02:08 AM	3675	30.19	0.19	815.04
08/26	02:23 AM	3690	30.19	0.19	815.04
08/26	02:38 AM	3705	30.19	0.19	815.04
08/26	02:53 AM	3720	30.21	0.21	815.02
08/26	03:08 AM	3735	30.21	0.21	815.02
08/26	03:23 AM	3750	30.21	0.21	815.02
08/26	03:38 AM	3765	30.21	0.21	815.02
08/26	03:53 AM	3780	30.21	0.21	815.02
08/26	04:08 AM	3795	30.21	0.21	815.02
08/26	04:23 AM	3810	30.21	0.21	815.02
08/26	04:38 AM	3825	30.21	0.21	815.02
08/26	04:53 AM	3840	30.21	0.21	815.02
08/26	05:08 AM	3855	30.21	0.21	815.02
08/26	05:23 AM	3870	30.21	0.21	815.02
08/26	05:38 AM	3885	30.21	0.21	815.02
08/26	05:53 AM	3900	30.21	0.21	815.02
08/26	06:08 AM	3915	30.21	0.21	815.02
08/26	06:23 AM	3930	30.19	0.19	815.04
08/26	06:38 AM	3945	30.19	0.19	815.04
08/26	06:53 AM	3960	30.19	0.19	815.04
08/26	07:08 AM	3975	30.19	0.19	815.04

BAROMETRIC PRESSURE DURING PUMPING TEST WEEK  
WRR RI SITE  
COLUMBIA CITY, INDIANA

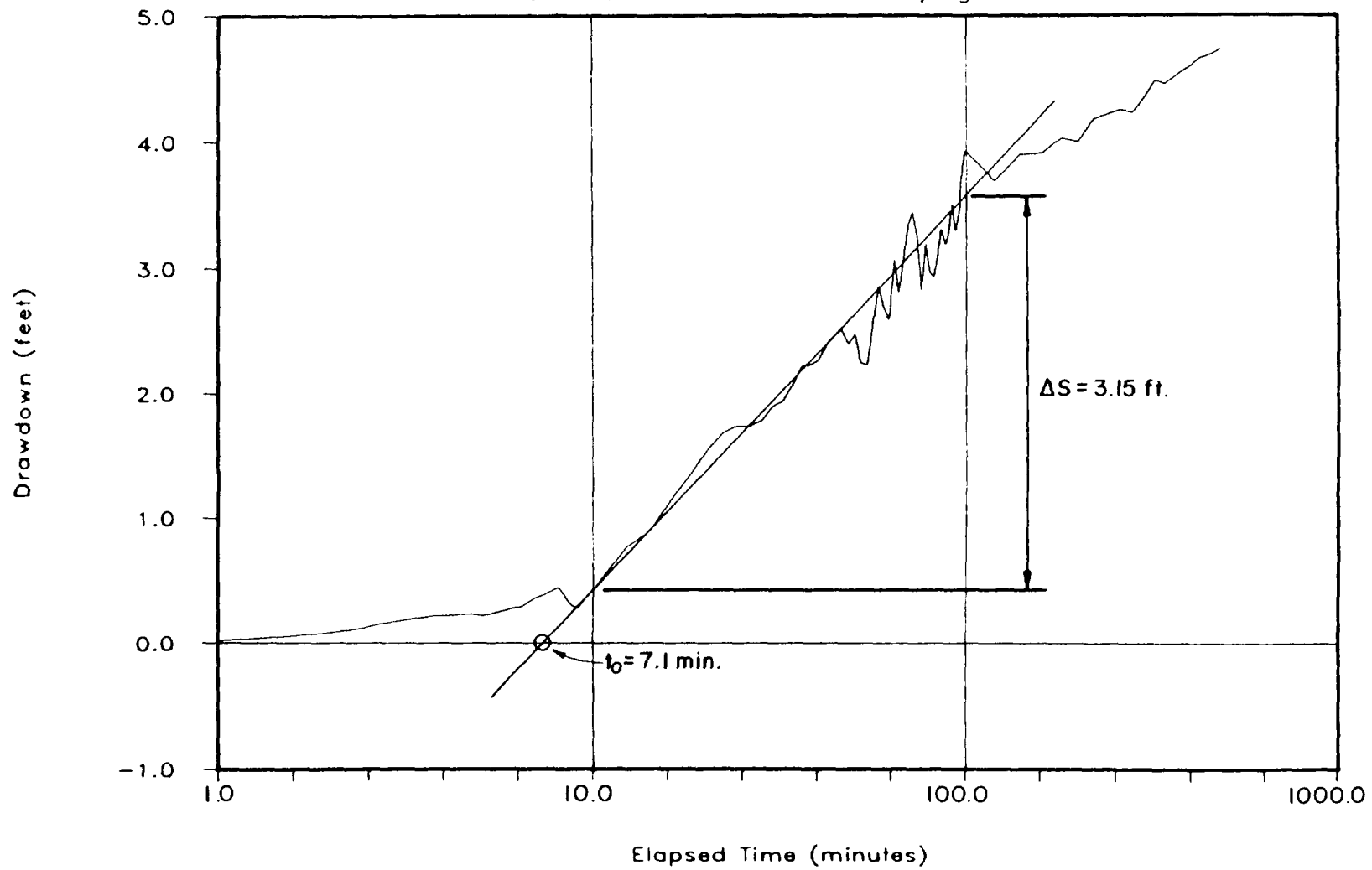
		DATE	TIME	(mb)
		-----	-----	-----
Mon		22-Aug	08:00 AM	1010
Mon	Noon	22-Aug	12:00 PM	1007
Mon		22-Aug	04:00 PM	1005
Mon		22-Aug	08:00 PM	1005
Mon	Mid-night	22-Aug	12:00 PM	1002
Tues		23-Aug	04:00 AM	999
Tues		23-Aug	08:00 AM	998
Tues	Noon	23-Aug	12:00 PM	998
Tues		23-Aug	04:00 PM	998
Tues		23-Aug	08:00 PM	999
Tues	Mid-night	23-Aug	12:00 PM	998
Wednes		24-Aug	04:00 AM	998.5
Wednes		24-Aug	08:00 AM	998
Wednes	Noon	24-Aug	12:00 PM	997
Wednes		24-Aug	04:00 PM	996
Wednes		24-Aug	08:00 PM	997
Wednes	Mid-night	24-Aug	12:00 PM	996
Thurs		25-Aug	04:00 AM	995
Thurs		25-Aug	08:00 AM	994
Thurs	Noon	25-Aug	12:00 PM	992
Thurs		25-Aug	04:00 PM	992.5
Thurs		25-Aug	08:00 PM	995
Thurs	Mid-night	25-Aug	12:00 PM	996
Fri		26-Aug	04:00 AM	997.5
Fri		26-Aug	08:00 AM	999
Fri	Noon	26-Aug	12:00 PM	

H-2

GRAPHIC PLOTS OF NORMALIZED DATA

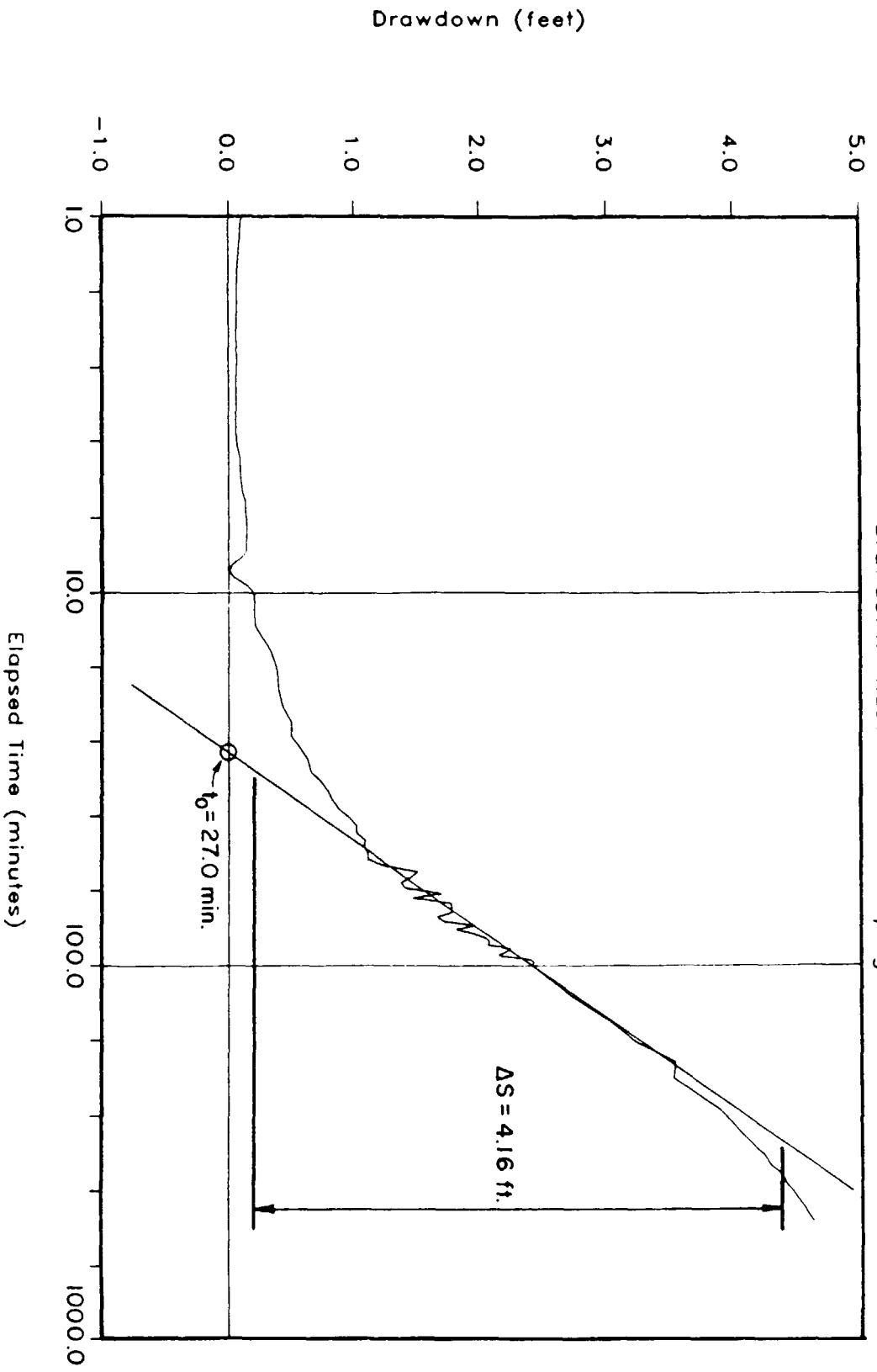
# MW-1D Semi-Log Plot

Drawdown Phase -- WRR Pumping Test



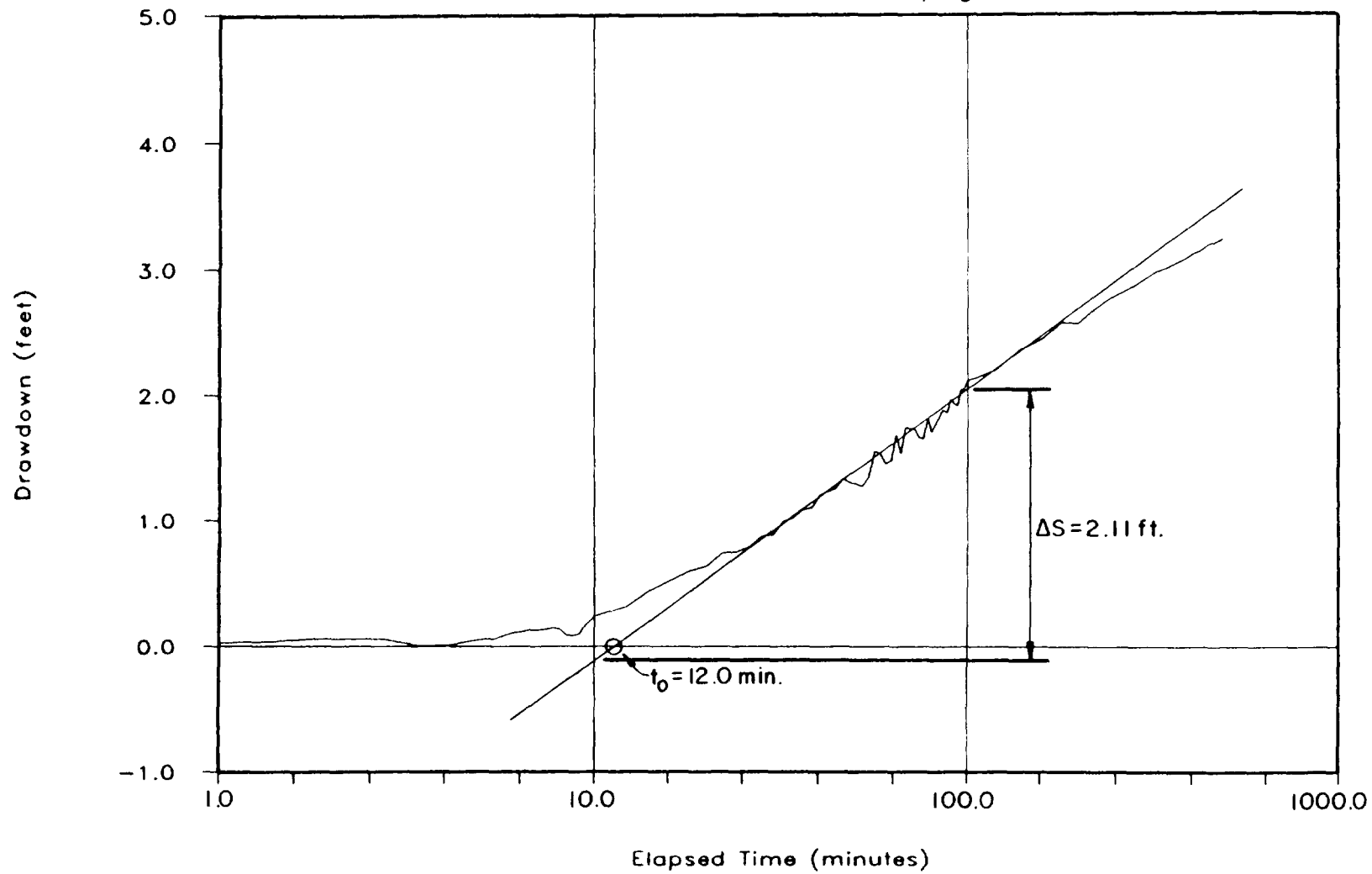
# MW-8D Semi-Log Plot

Drawdown Phase -- WRR Pumping Test



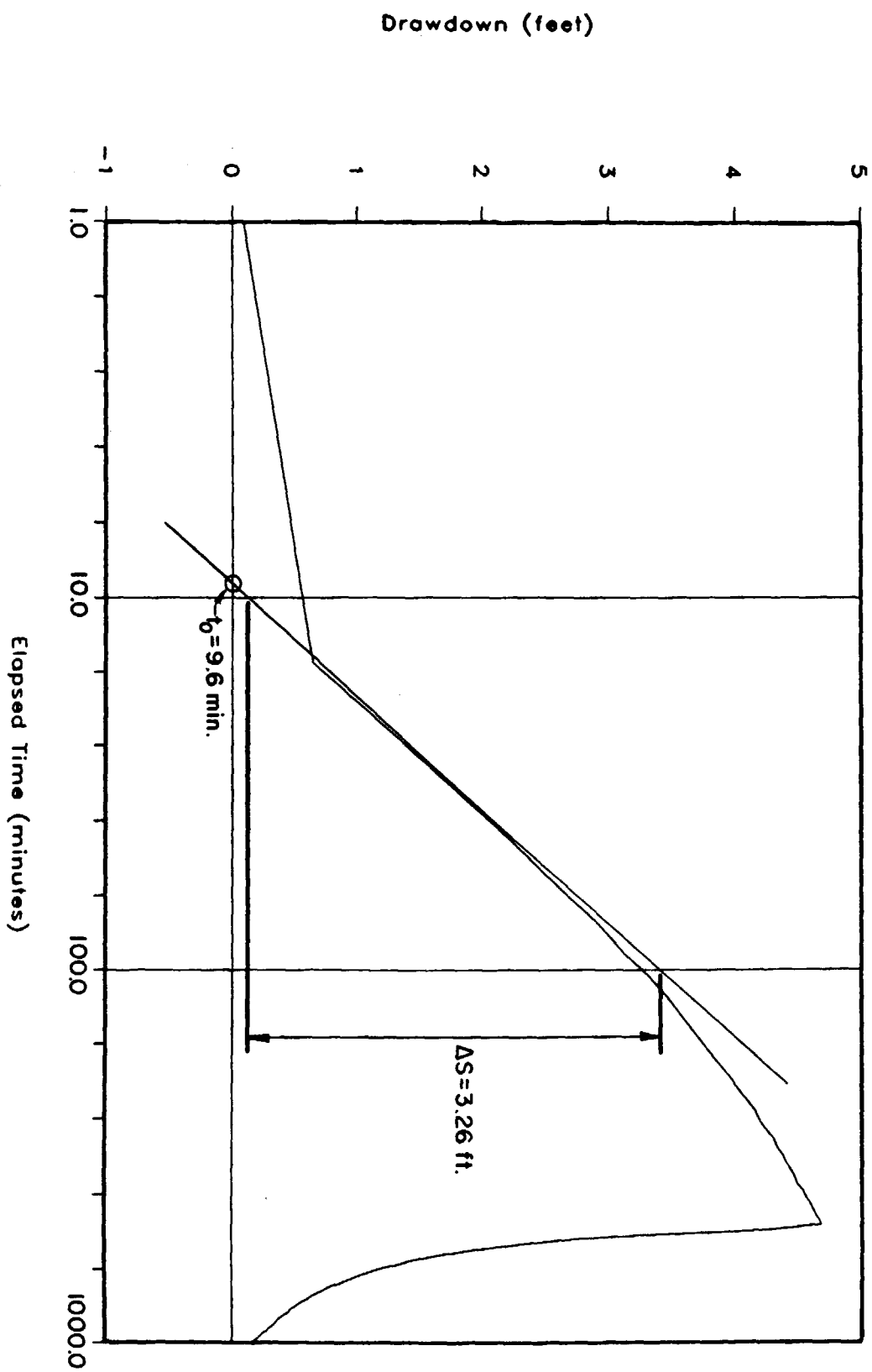
# MW-13D Semi-Log Plot

Drawdown Phase -- WRR Pumping Test



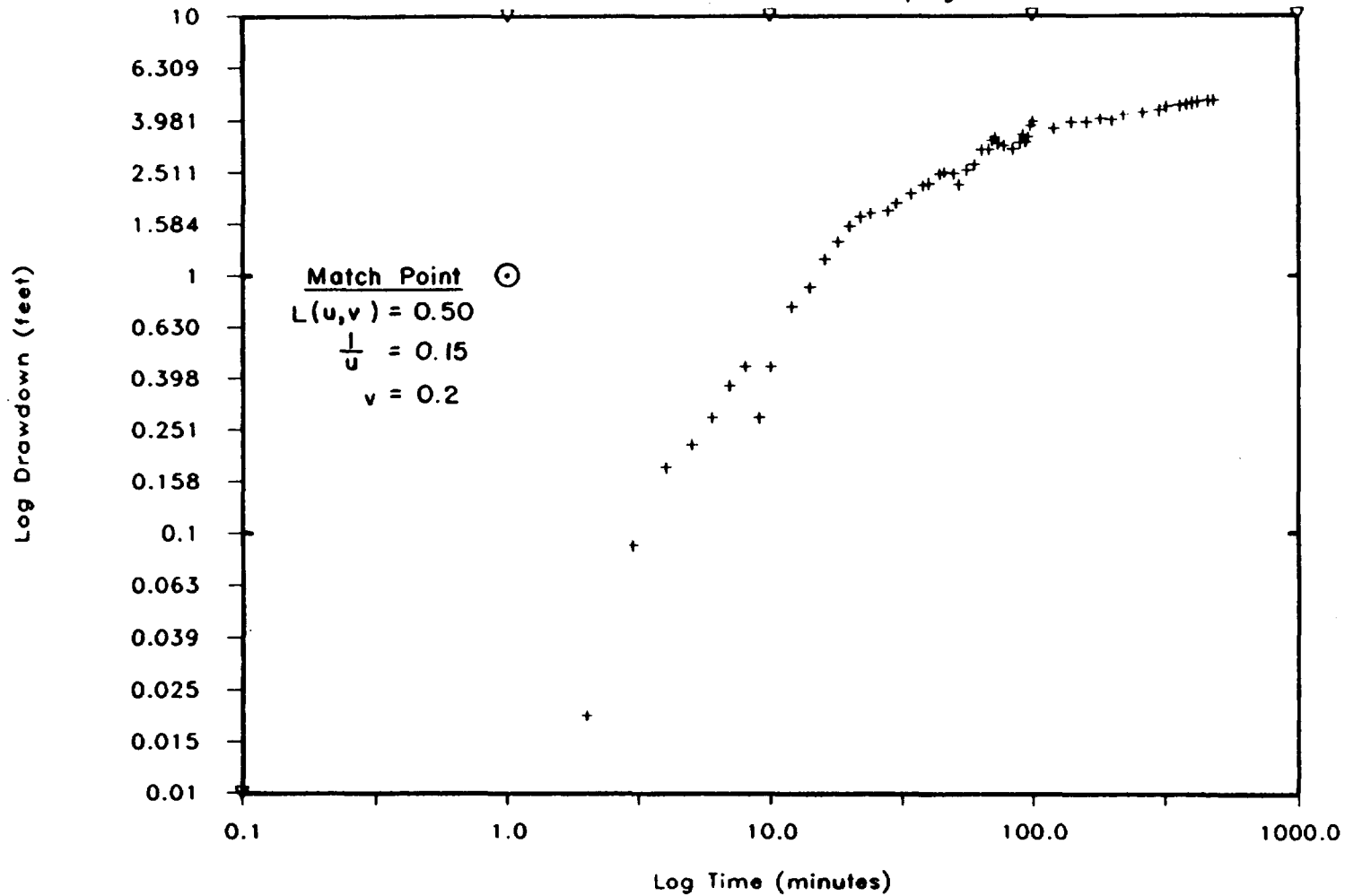
# PH Well Semi-Log Plot

Pumping Test: August 24 - 25

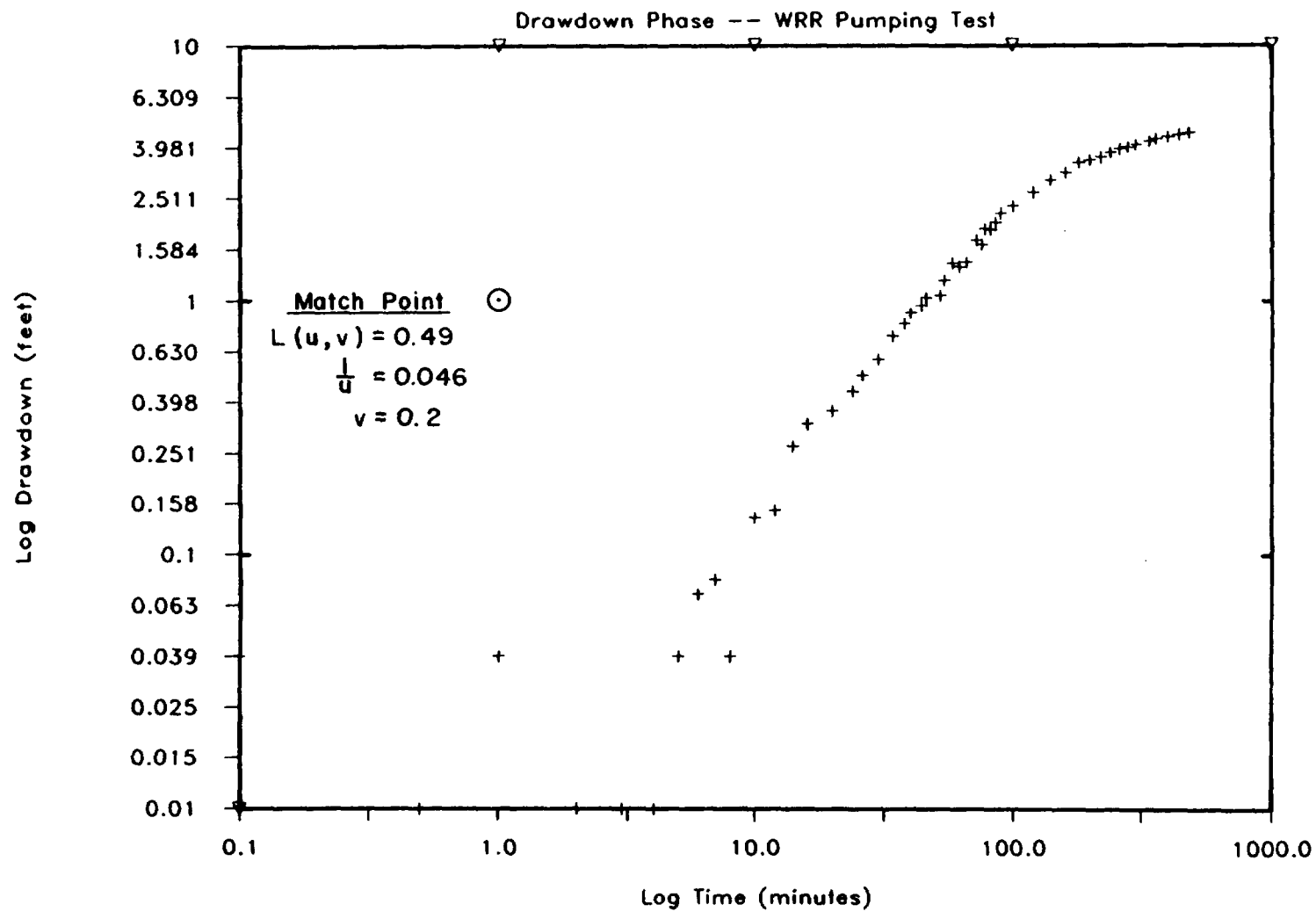


# Log-Log Plot -- MW-1D

Drawdown Phase -- WRR Pumping Test

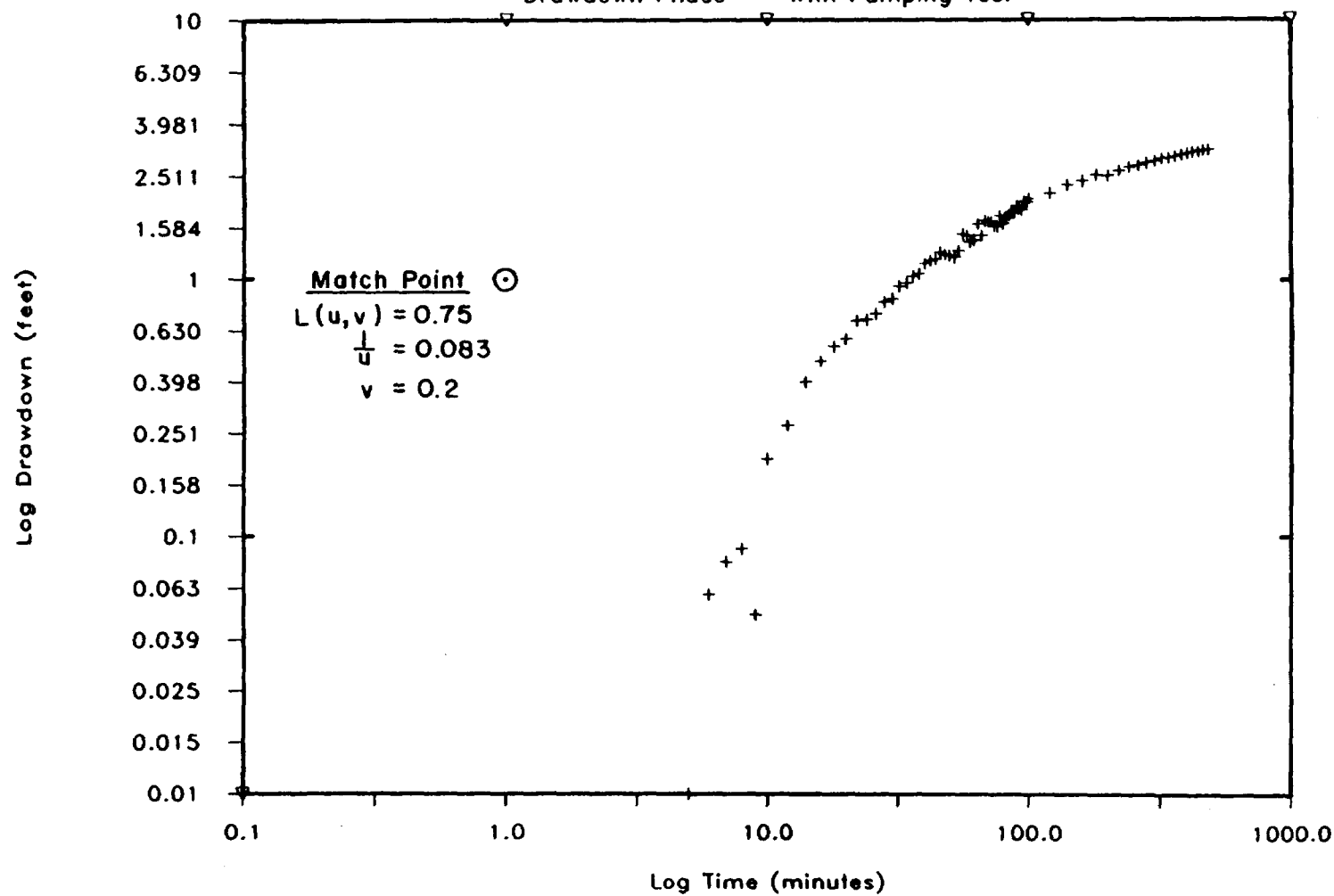


# Log-Log Plot -- MW-8D

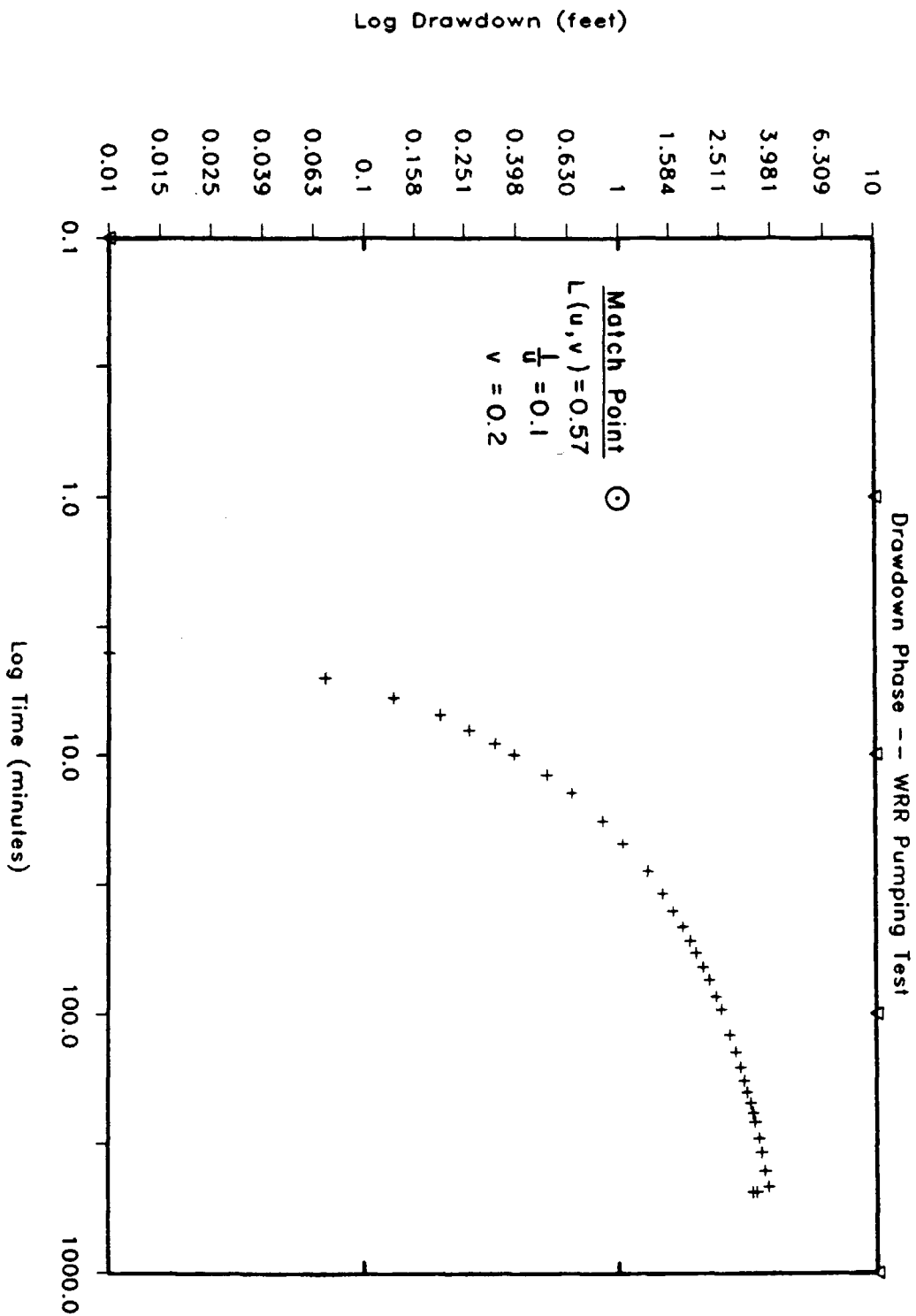


# Log-Log Plot -- MW-13D

Drawdown Phase -- WRR Pumping Test



# Log-Log Plot -- PH Well



H-3

HYDRAULIC PROPERTY CALCULATIONS

Appendix H-3. Hydraulic Property Calculation. Lower Aquifer, WRR RI/FS Site,  
Jacob straight-line method.

Page 1

Observation Well Number	r (ft)	del s (ft)	t <sub>0</sub> (min)	Q (cfm)	Transmissivity	Storativity
MW-1D	690	3.15	7.1	208	12.1 ft <sup>2</sup> /min 17,000 ft <sup>2</sup> /day	3.9x10 <sup>-2</sup>
MW-8D	1170	4.16	27.0	208	9.1 ft <sup>2</sup> /min 13,000 ft <sup>2</sup> /day	1.8x10 <sup>-2</sup>
MW-13D	1275	2.11	12.0	208	18.0 ft <sup>2</sup> /min 26,000 ft <sup>2</sup> /day	3.2x10 <sup>-2</sup>
PH	1420	3.26	9.6	208	11.7 ft <sup>2</sup> /min 17,000 ft <sup>2</sup> /day	1.8x10 <sup>-2</sup>
Pumping Rate: 1,554 gpm						
					Geometric Mean: 12.3 ft <sup>2</sup> /min	2.5x10 <sup>-2</sup>
					Geometric Mean: 17,000 ft <sup>2</sup> /day	

NOTES:

Calculation by Jacob Straight Line Method, (Cooper and Jacob, 1946)  
Calculations rounded to 2 and 3 significant figures.

Appendix H-3. Hydraulic Property Calculation. Lower Aquifer, WRR RI/FS Site,  
Log-log method with leakance calculation.

Page 2

Observation Well Number	Lohman Curve Match Variables				Q (cfm)	Horizontal Transmissivity	Storativity (unitless)	Confining Layer Thickness	Leakance (1/min)	Vertical Permeability
	r (ft)	L(u,v)	1/u	v						
MW-1D	690	0.50	0.150	0.2	208	8.3 ft <sup>2</sup> /min 12,000 ft <sup>2</sup> /day	4.6x10 <sup>-4</sup>	20 ft	2.8x10 <sup>-6</sup>	5.6x10 <sup>-5</sup> ft/min 0.08 ft/day
MW-8D	1170	0.49	0.046	0.2	208	8.1 ft <sup>2</sup> /min 12,000 ft <sup>2</sup> /day	5.1x10 <sup>-4</sup>	20 ft	9.5x10 <sup>-7</sup>	1.9x10 <sup>-5</sup> ft/min 0.03 ft/day
MW-13D	1275	0.75	0.830	0.2	208	12.4 ft <sup>2</sup> /min 18,000 ft <sup>2</sup> /day	3.7x10 <sup>-4</sup>	35 ft	1.2x10 <sup>-6</sup>	4.3x10 <sup>-5</sup> ft/min 0.06 ft/day
PH	1420	0.57	0.100	0.2	208	9.4 ft <sup>2</sup> /min 14,000 ft <sup>2</sup> /day	1.9x10 <sup>-4</sup>	40 ft	7.5x10 <sup>-7</sup>	3.0x10 <sup>-5</sup> ft/min 0.04 ft/day
Pumping Rate: 1,554 gpm										
Geometric Mean:						9.4 ft <sup>2</sup> /min 14,000 ft <sup>2</sup> /day	2.0x10 <sup>-4</sup>		1.2x10 <sup>-6</sup>	3.4x10 <sup>-5</sup> ft/min 0.05 ft/day

NOTES:

Calculation by Curve Match, Lohman (1972)

Calculations rounded to 1 to 3 significant figures.

## APPENDIX I

### GROUNDWATER MODELING RESULTS

I-1

FORTRAN SOURCE CODE -- THEIS ANALYTICAL MODEL

```

$DEBUG
  PROGRAM THEIS
C . . DECLARATIONS
  DIMENSION X1(50),Y1(50),Q1(50),T1(50),T2(50),RW(50),
1          XHEAD(100,100),XG(100),YG(100)
  CHARACTER*15 OUT1,OUT2
  CHARACTER*80 DESCRP
C - - - - -
C 1. A. READ DESCRIPTION OF MODEL FROM THE KEYBOARD
C - - - - -
C
  WRITE (*,*) ' '
  WRITE (*,*) ' '
  WRITE (*,*) ' QUICK AND DIRTY THEIS WELL FIELD CALCULATOR'
  WRITE (*,*) ' 1-LAYER AQUIFER WITH UNIFORM PROPERTIES '
  WRITE (*,*) ' INPUT REGIONAL GRADIENT AND UP TO 50 SOURCES/SINKS'
  WRITE (*,*) ' '
  WRITE (*,*) ' Program transcribed to Fortran'
  WRITE (*,*) ' Input/Output format modified'
  WRITE (*,*) ' by P. Vagt, Warzyn Engineering'
  WRITE (*,*) ' 6/30/87'
  WRITE (*,*) ' -----'
  WRITE (*,*) ' '
  WRITE (*,*) ' Enter the Details of this Model Run'
  WRITE (*,*) ' (do not exceed 80 characters)'
  WRITE (*,*) ' '
  READ (*,8) DESCRP
C - - READ FILENAME FROM THE KEYBOARD
  WRITE (*,6)
  READ (*,10)OUT1
  WRITE (*,7)
  READ (*,10)OUT2
C
C OPEN FILES AND READ IN FILE.NAMES
C - - READ FILENAME FROM THE KEYBOARD
  6 FORMAT(' Filename Matrix Output ? '\)
  7 FORMAT(' Filename for Plot-file Output ? '\)
  8 FORMAT(A80)
  10 FORMAT(A15)
C - - - - -
C
C UNIT 5 FOR WELL INPUT
C UNIT 6 FOR MATRIX OUTPUT
C UNIT 7 FOR PLOTTING OUTPUT
  OPEN(5,FILE='WELL.IN',STATUS='OLD')
  OPEN(6,FILE=OUT1,STATUS='NEW')
  OPEN(7,FILE=OUT2,STATUS='NEW')
C
  WRITE (6,13)DESCRP
13 FORMAT('/' QUICK AND DIRTY THEIS WELL FIELD CALCULATOR'/
1' 1-LAYER AQUIFER WITH UNIFORM PROPERTIES '/
2' INPUT REGIONAL GRADIENT AND UP TO 50 SOURCES/SINKS'/
3' -----'//
4 1X,A80//30X,'INPUT VARIABLES'/30X,'-----'//)
C

```

```

C . . READ IN TRANSMISSIVITY VALUES
      WRITE (*,20)
      READ (*,*)TRANS
C . . READ IN S
      WRITE (*,22)
      READ (*,*)S
C . . READ IN AVERAGE REGIONAL HEAD
      WRITE (*,23)
      READ (*,*)HEAD
C . . READ IN AVERAGE REGIONAL HYDRAULIC GRADIENT
      WRITE (*,24)
      READ (*,*)GRAD
C . . READ IN REGIONAL GRADIENT
      WRITE (*,25)
      READ (*,*)ANGLE
C . . READ IN NUMBER OF COLUMNS
      WRITE (*,26)
      READ (*,*)NC
C . . READ IN NUMBER OF ROWS
      WRITE (*,28)
      READ (*,*)NR
C . . READ IN GRID SPACING
      WRITE (*,30)
      READ (*,*)SCALE
C . . READ LOWER LEFT-HAND CORNER OF WINDOW (FEET)
      WRITE (*,31)
      READ (*,*)X,Y
C . . READ IN NUMBER OF WELLS
      WRITE (*,32)
      READ (*,*)NWELLS
C . . READ IN WELL PARAMETERS
      IF(NWELLS.EQ.0)GOTO 39
      IF(NWELLS.EQ.999)GOTO 36
      WRITE (*,34)
      DO 15 I=1,NWELLS
        WRITE (*,35) I
        READ (*,*)X1(I),Y1(I),RW(I),Q1(I),T1(I)
15 CONTINUE
      GOTO 39
C
20 FORMAT(/' Aquifer Transmissivity (gpd/ft) = ? '\)
22 FORMAT(/' Aquifer Storativity = '\)
23 FORMAT(/' Average Watertable Elevation (feet) = '\)
24 FORMAT(/' Regional Gradient: Enter negative gradient '/'
1      ' (-)if any component of groundwater movement '/'
2      ' is in the negative Y direction: '\)
25 FORMAT(/' Direction of regional gradient/'
1      ' Select angle from 0 to 359 degrees/'
2      ' N = 0, E = 90, S = 180, W = 270: '\)
26 FORMAT(/' Number of Columns = '\)
28 FORMAT(/' Number of Rows = '\)
30 FORMAT(/' Grid Spacing (feet) = '\)
31 FORMAT(/' Enter UPPER LEFT-HAND corner of plotting window ',
1      ' in feet (X,Y): '\)

```

```

32 FORMAT('/' Enter Number of Wells: '/'
1' OR, Enter 999 to read WELL.IN'/)

34 FORMAT('/'                               Radius    Q    Time'/
1'          INPUT:  X    Y    (feet)    (gpm) (days)')
35 FORMAT(' For Well # ',I2,' --> '\)

C
C . . READ IN WELLS IF FLAG = 999
36 READ (5,*)NWELLS
DO 37 I=1, NWELLS
  READ (5,38) X1(I),Y1(I),RW(I),Q1(I),T1(I)
37 CONTINUE
38 FORMAT(5F8.0)

C
C . . PRINT INPUT VALUES TO SCREEN
C   PRINT INPUT VALUES TO OUTPUT FILE
C
39 WRITE(*,*)' '
  WRITE(*,40) TRANS,S,HEAD,ANGLE,GRAD,NC,NR,SCALE,X,Y,NWELLS
  WRITE(6,40)TRANS,S,HEAD,ANGLE,GRAD,NC,NR,SCALE,X,Y,NWELLS
40 FORMAT (6X,'Aquifer Transmissivity (gpd/ft) = 'F8.1/18X,
1'Aquifer Storativity = ',E8.2/' Average Water Table ',
2'Elevation (feet) = ',F7.1/7X,'Direction of Regional Gradient = '
3,F6.0/11X,'Hydraulic Gradient (ft/ft) = ',E9.3/20X,
4'Number of Columns = ',I4/23X,'Number of Rows = ',I4/18X,
5'Grid Spacing (feet) = ',F5.0/7X,'Upper left-hand corner of plot'
6,' = ('F4.0,',',F4.0,')'/22X'Number of Wells = ',I3/)

C
C . . PRINT OUT WELL PARAMETERS
C
  WRITE (*,52)
  WRITE (6,52)
  IF(NWELLS.EQ.0)GOTO 90
  DO 50 I=1,NWELLS
    T2(I)=T1(I)*24.
    WRITE (*,54)I,X1(I),Y1(I),RW(I),Q1(I),T1(I),T2(I)
    WRITE (6,54)I,X1(I),Y1(I),RW(I),Q1(I),T1(I),T2(I)
50 CONTINUE
52 FORMAT('/'
1' WELL #      X      Y      (feet)    RADIUS      Q      Time'/
2' -----
54 FORMAT(I6,2X,2F8.1,2X,F6.1,2F8.2,F8.1)

C
C . . CONVERT ANGLE TO RADIANS
C
90 THETA=ANGLE*3.141593/180
ITER=0

C
DO 184 J=1,NR
  DO 182 I=1,NC
    DD=0.0

```

```

      DO 180 K=1,NWELLS
        XP=X+SCALE*I-X1(K)
        YP=Y+SCALE*J-Y1(K)
        U=(1.87*(XP*XP+YP*YP)*S)/TRANS/T1(K)
        IF(U.NE.0.0) GOTO 110
        U=1.87*((RW(K))**2)*S/(TRANS*T1(K))
110      IF(U.LE.1.0)GOTO 140
        IF(U.GT.10.0)GOTO 120
        W=(U**4+8.573301*U**3+18.059*U**2+8.6348*U+.2678)/(U**4+
1      9.573301*U**3+25.633*U**2+21.1*U+3.9585)/U/(EXP(U))
        GOTO 150
120      W=0.0
        GOTO 150
140      W=-LOG(U)-.5772+U-.25*U**2+.0552*U**3-.0098*U**4+
1      0.0011*U**5
150      DD=DD-114.6*Q1(K)*W/TRANS
180      CONTINUE
        XG(I)=X+SCALE*I
        YG(J)=Y+SCALE*J
        XHEAD(I,J)=DD+GRAD*(XG(I)*SIN(THETA)-YG(J)*COS(THETA))+HEAD
182      CONTINUE
184      CONTINUE
        WRITE(*,*)' '
        WRITE(*,*)' '
        WRITE(*,*)' ====='
        WRITE(*,*)' SIMULATION COMPLETE -- Writing results to files'
        WRITE(*,*)' ====='
        WRITE(*,*)' '

C
C . . PRINTOUT RESULTS IN MATRIX GRID (6) AND FOR PLOTTING (7)
C
      WRITE (6,190)
190      FORMAT(///' HEAD DISTRIBUTION'/' ====='/)
      DO 250 IB=1,NC,15
        IE=IB+14
        NCOL=MIN0(NC,IE)
        IF(IE-NC)220,220,210
210      EI=NC
C . . PRINT HEADING
220      WRITE(6,260)(XG(I),I=IB,NCOL)
        DO 240 J=1,NR
          WRITE(6,270)YG(J),(XHEAD(K,J),K=IB,NCOL)
240      CONTINUE
        WRITE(6,280)
250      CONTINUE
260      FORMAT(7X,15F8.0/)
270      FORMAT(F7.0,15F8.2)
280      FORMAT(//)

C
C . . PRINTOUT RESULTS FOR PLOTTING
C . . DETERMINE INPUT HEADER VALUES FOR GOLDEN GRAPHICS GRIDDING
C
      ZMIN=1E+10
      ZMAX=0.

```

```

      DO 300 J=1,NR
        DO 300 I=1,NC
          ZMIN=MIN(XHEAD(I,J),ZMIN)
          ZMAX=MAX(XHEAD(I,J),ZMAX)
300  CONTINUE
C . . PRINTOUT RESULTS FOR PLOTTING with Golden Graphics 4.0
C   Changing columns to rows and rows to columns
C   and putting into positive X,Y Quadrant format
C
      WRITE(7,410)NR,NC,NR,NC,ZMIN,ZMAX
      DO 400 I=1,NC
        WRITE (7,450) (XHEAD(I,J),J=1,NR)
        WRITE (7,*) ' '
400  CONTINUE
410  FORMAT(5HDSAA,/2I3,/' 1',I3,/' 1',I3,/2F8.2)
450  FORMAT(10F8.2/10F8.2/10F8.2/10F8.2/10F8.2/10F8.2/10F8.2,
1 /10F8.2/10F8.2/10F8.2/)
C -----
      CLOSE(5,STATUS='KEEP')
      CLOSE(6,STATUS='KEEP')
      CLOSE(7,STATUS='KEEP')
      STOP
      END

```

I-2

THEIS ANALYTICAL MODEL OUTPUT

APPENDIX I-2  
THEIS ANALYTICAL MODEL OUTPUT

Page 6

QUICK AND DIRTY THEIS WELL FIELD CALCULATOR  
1-LAYER AQUIFER WITH UNIFORM PROPERTIES  
INPUT REGIONAL GRADIENT AND UP TO 50 SOURCES/SINKS

WRRO Regional Gradient Modeled with no Pumping

INPUT VARIABLES

Aquifer Transmissivity (gpd/ft) = 130000.0  
Aquifer Storativity = .25E-03  
Average Water Table Elevation (feet) = 814.  
Direction of Regional Gradient = 48.  
Hydraulic Gradient (ft/ft) = -.140E-02  
Number of Columns = 21  
Number of Rows = 25  
Grid Spacing (feet) = 250.  
Upper left-hand corner of plot = ( 0., 0.)  
Number of Wells = 0

WELL #	X	Y	RADIUS (feet)	Q (gpm)	Time (days)	Time (hours)
0						

HEAD DISTRIBUTION  
=====

	250.	500.	750.	1000.	1250.	1500.	1750.	2000.	2250.	2500.	2750.	3000.	3250.	3500.	3750.
250.	813.97	813.71	813.45	813.19	812.93	812.67	812.41	812.15	811.89	811.63	811.37	811.11	810.85	810.59	810.3
500.	814.21	813.95	813.69	813.43	813.17	812.91	812.65	812.39	812.13	811.87	811.61	811.35	811.09	810.83	810.5
750.	814.44	814.18	813.92	813.66	813.40	813.14	812.88	812.62	812.36	812.10	811.84	811.58	811.32	811.06	810.8
1000.	814.68	814.42	814.16	813.90	813.64	813.38	813.12	812.86	812.60	812.34	812.08	811.82	811.56	811.30	811.0
1250.	814.91	814.65	814.39	814.13	813.87	813.61	813.35	813.09	812.83	812.57	812.31	812.05	811.79	811.53	811.2
1500.	815.15	814.88	814.62	814.36	814.10	813.84	813.58	813.32	813.06	812.80	812.54	812.28	812.02	811.76	811.5
1750.	815.38	815.12	814.86	814.60	814.34	814.08	813.82	813.56	813.30	813.04	812.78	812.52	812.26	812.00	811.7
2000.	815.61	815.35	815.09	814.83	814.57	814.31	814.05	813.79	813.53	813.27	813.01	812.75	812.49	812.23	811.9
2250.	815.85	815.59	815.33	815.07	814.81	814.55	814.29	814.03	813.77	813.51	813.25	812.99	812.73	812.47	812.2
2500.	816.08	815.82	815.56	815.30	815.04	814.78	814.52	814.26	814.00	813.74	813.48	813.22	812.96	812.70	812.4
2750.	816.32	816.06	815.80	815.54	815.28	815.02	814.76	814.50	814.24	813.98	813.72	813.45	813.19	812.93	812.6
3000.	816.55	816.29	816.03	815.77	815.51	815.25	814.99	814.73	814.47	814.21	813.95	813.69	813.43	813.17	812.9
3250.	816.78	816.52	816.26	816.00	815.74	815.48	815.22	814.96	814.70	814.44	814.18	813.92	813.66	813.40	813.1
3500.	817.02	816.76	816.50	816.24	815.98	815.72	815.46	815.20	814.94	814.68	814.42	814.16	813.90	813.64	813.3
3750.	817.25	816.99	816.73	816.47	816.21	815.95	815.69	815.43	815.17	814.91	814.65	814.39	814.13	813.87	813.6
4000.	817.49	817.23	816.97	816.71	816.45	816.19	815.93	815.67	815.41	815.15	814.89	814.63	814.37	814.11	813.8
4250.	817.72	817.46	817.20	816.94	816.68	816.42	816.16	815.90	815.64	815.38	815.12	814.86	814.60	814.34	814.0
4500.	817.96	817.70	817.44	817.18	816.92	816.65	816.39	816.13	815.87	815.61	815.35	815.09	814.83	814.57	814.3
4750.	818.19	817.93	817.67	817.41	817.15	816.89	816.63	816.37	816.11	815.85	815.59	815.33	815.07	814.81	814.5
5000.	818.42	818.16	817.90	817.64	817.38	817.12	816.86	816.60	816.34	816.08	815.82	815.56	815.30	815.04	814.7
5250.	818.66	818.40	818.14	817.88	817.62	817.36	817.10	816.84	816.58	816.32	816.06	815.80	815.54	815.28	815.0
5500.	818.89	818.63	818.37	818.11	817.85	817.59	817.33	817.07	816.81	816.55	816.29	816.03	815.77	815.51	815.2
5750.	819.13	818.87	818.61	818.35	818.09	817.83	817.57	817.31	817.05	816.79	816.53	816.27	816.01	815.75	815.4
6000.	819.36	819.10	818.84	818.58	818.32	818.06	817.80	817.54	817.28	817.02	816.76	816.50	816.24	815.98	815.7
6250.	819.59	819.33	819.07	818.81	818.55	818.29	818.03	817.77	817.51	817.25	816.99	816.73	816.47	816.21	815.9

APPENDIX I-2  
THEIS ANALYTICAL MODEL OUTPUT

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	4000.	4250.	4500.	4750.	5000.	5250.
250.	810.07	809.81	809.55	809.29	809.03	808.77
500.	810.31	810.05	809.79	809.53	809.27	809.01
750.	810.54	810.28	810.02	809.76	809.50	809.24
1000.	810.78	810.52	810.25	809.99	809.73	809.47
1250.	811.01	810.75	810.49	810.23	809.97	809.71
1500.	811.24	810.98	810.72	810.46	810.20	809.94
1750.	811.48	811.22	810.96	810.70	810.44	810.18
2000.	811.71	811.45	811.19	810.93	810.67	810.41
2250.	811.95	811.69	811.43	811.17	810.91	810.65
2500.	812.18	811.92	811.66	811.40	811.14	810.88
2750.	812.41	812.15	811.89	811.63	811.37	811.11
3000.	812.65	812.39	812.13	811.87	811.61	811.35
3250.	812.88	812.62	812.36	812.10	811.84	811.58
3500.	813.12	812.86	812.60	812.34	812.08	811.82
3750.	813.35	813.09	812.83	812.57	812.31	812.05
4000.	813.59	813.33	813.07	812.81	812.55	812.29
4250.	813.82	813.56	813.30	813.04	812.78	812.52
4500.	814.05	813.79	813.53	813.27	813.01	812.75
4750.	814.29	814.03	813.77	813.51	813.25	812.99
5000.	814.52	814.26	814.00	813.74	813.48	813.22
5250.	814.76	814.50	814.24	813.98	813.72	813.46
5500.	814.99	814.73	814.47	814.21	813.95	813.69
5750.	815.22	814.96	814.70	814.44	814.18	813.92
6000.	815.46	815.20	814.94	814.68	814.42	814.16
6250.	815.69	815.43	815.17	814.91	814.65	814.39

# APPENDIX I-2 THEIS ANALYTICAL MODEL OUTPUT

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QUICK AND DIRTY THEIS WELL FIELD CALCULATOR  
1-LAYER AQUIFER WITH UNIFORM PROPERTIES  
INPUT REGIONAL GRADIENT AND UP TO 50 SOURCES/SINKS

WRR1 One well 1500 gpm pump with Regional Gradient

## INPUT VARIABLES

Aquifer Transmissivity (gpd/ft) = 130000.0  
Aquifer Storativity = .25E-03  
Average Water Table Elevation (feet) = 814.0  
Direction of Regional Gradient = 48.  
Hydraulic Gradient (ft/ft) = -.140E-02  
Number of Columns = 21  
Number of Rows = 25  
Grid Spacing (feet) = 250.  
Upper left-hand corner of plot = ( 0., 0.)  
Number of Wells = 1

WELL #	X	Y	RADIUS (feet)	Q (gpm)	Time (days)	(hours)
1	240.0	4350.0	3.0	1500.00	.33	8.0

## HEAD DISTRIBUTION

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	250.	500.	750.	1000.	1250.	1500.	1750.	2000.	2250.	2500.	2750.	3000.	3250.	3500.	3750.
250.	812.25	811.99	811.75	811.51	811.27	811.05	810.83	810.61	810.40	810.19	809.99	809.79	809.58	809.38	809.1
500.	812.34	812.09	811.84	811.61	811.38	811.16	810.94	810.73	810.53	810.33	810.13	809.93	809.74	809.54	809.3
750.	812.43	812.17	811.93	811.70	811.47	811.26	811.05	810.85	810.65	810.46	810.27	810.08	809.89	809.70	809.5
1000.	812.49	812.24	812.00	811.77	811.55	811.35	811.15	810.95	810.76	810.58	810.40	810.22	810.04	809.85	809.6
1250.	812.54	812.29	812.06	811.83	811.62	811.42	811.23	811.05	810.87	810.70	810.53	810.35	810.18	810.01	809.8
1500.	812.58	812.33	812.09	811.88	811.68	811.49	811.31	811.14	810.97	810.81	810.65	810.49	810.32	810.16	809.9
1750.	812.59	812.34	812.11	811.91	811.72	811.54	811.38	811.22	811.07	810.92	810.77	810.62	810.47	810.31	810.1
2000.	812.57	812.32	812.11	811.91	811.74	811.58	811.43	811.30	811.16	811.02	810.89	810.75	810.61	810.46	810.3
2250.	812.52	812.28	812.07	811.90	811.74	811.61	811.48	811.36	811.25	811.13	811.01	810.88	810.75	810.62	810.4
2500.	812.43	812.20	812.01	811.85	811.72	811.62	811.52	811.42	811.33	811.23	811.13	811.02	810.90	810.78	810.6
2750.	812.30	812.07	811.90	811.78	811.69	811.61	811.55	811.48	811.41	811.34	811.25	811.16	811.05	810.94	810.8
3000.	812.09	811.88	811.74	811.67	811.63	811.60	811.57	811.54	811.50	811.45	811.38	811.30	811.21	811.11	810.9
3250.	811.79	811.60	811.53	811.52	811.55	811.58	811.60	811.61	811.60	811.57	811.52	811.45	811.37	811.28	811.1
3500.	811.35	811.21	811.24	811.34	811.46	811.57	811.64	811.69	811.71	811.70	811.67	811.62	811.55	811.47	811.3
3750.	810.67	810.64	810.87	811.15	811.39	811.58	811.71	811.80	811.84	811.86	811.84	811.80	811.74	811.66	811.5
4000.	809.48	809.80	810.47	811.00	811.38	811.65	811.83	811.94	812.01	812.03	812.03	812.00	811.94	811.87	811.7
4250.	806.42	808.85	810.24	811.00	811.48	811.79	812.00	812.13	812.21	812.24	812.24	812.21	812.16	812.09	812.0
4500.	807.72	809.29	810.53	811.27	811.73	812.04	812.24	812.37	812.45	812.48	812.48	812.45	812.40	812.33	812.2
4750.	810.54	810.74	811.29	811.77	812.13	812.38	812.55	812.66	812.72	812.75	812.74	812.71	812.65	812.58	812.4
5000.	812.05	811.99	812.16	812.40	812.62	812.79	812.91	812.99	813.03	813.04	813.02	812.98	812.92	812.84	812.7
5250.	813.14	812.99	812.99	813.07	813.16	813.25	813.32	813.36	813.37	813.36	813.33	813.27	813.20	813.11	813.0
5500.	814.02	813.82	813.73	813.71	813.72	813.74	813.75	813.75	813.73	813.70	813.64	813.58	813.50	813.40	813.2
5750.	814.76	814.55	814.40	814.32	814.26	814.22	814.19	814.15	814.10	814.05	813.98	813.89	813.80	813.69	813.5
6000.	815.42	815.19	815.02	814.89	814.79	814.71	814.63	814.56	814.49	814.41	814.32	814.22	814.11	814.00	813.8
6250.	816.02	815.78	815.58	815.42	815.29	815.17	815.07	814.97	814.87	814.77	814.66	814.55	814.43	814.30	814.1

APPENDIX I-2  
THEIS ANALYTICAL MODEL OUTPUT

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	4000.	4250.	4500.	4750.	5000.	5250.
250.	808.98	808.78	808.57	808.37	808.16	807.95
500.	809.15	808.95	808.75	808.55	808.35	808.14
750.	809.32	809.13	808.93	808.73	808.54	808.33
1000.	809.49	809.30	809.11	808.92	808.72	808.53
1250.	809.65	809.47	809.29	809.10	808.91	808.72
1500.	809.82	809.65	809.47	809.29	809.10	808.91
1750.	809.99	809.82	809.65	809.47	809.29	809.11
2000.	810.16	810.00	809.83	809.66	809.49	809.31
2250.	810.33	810.18	810.02	809.85	809.68	809.51
2500.	810.50	810.36	810.20	810.04	809.88	809.71
2750.	810.68	810.54	810.40	810.24	810.08	809.91
3000.	810.87	810.73	810.59	810.44	810.28	810.12
3250.	811.06	810.93	810.79	810.65	810.49	810.33
3500.	811.26	811.13	811.00	810.86	810.71	810.55
3750.	811.46	811.34	811.21	811.07	810.92	810.77
4000.	811.68	811.56	811.43	811.29	811.15	810.99
4250.	811.90	811.79	811.66	811.52	811.38	811.22
4500.	812.14	812.02	811.90	811.76	811.61	811.45
4750.	812.38	812.27	812.14	812.00	811.85	811.69
5000.	812.64	812.52	812.39	812.25	812.10	811.94
5250.	812.90	812.78	812.64	812.50	812.35	812.19
5500.	813.17	813.04	812.91	812.76	812.60	812.44
5750.	813.45	813.32	813.18	813.02	812.87	812.70
6000.	813.74	813.60	813.45	813.29	813.13	812.96
6250.	814.03	813.88	813.73	813.57	813.40	813.23

APPENDIX I-2  
THEIS ANALYTICAL MODEL OUTPUT

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QUICK AND DIRTY THEIS WELL FIELD CALCULATOR  
1-LAYER AQUIFER WITH UNIFORM PROPERTIES  
INPUT REGIONAL GRADIENT AND UP TO 50 SOURCES/SINKS

WRR2. Regional Gradient, 1500 gpm extraction well with leakage and K changes

INPUT VARIABLES

Aquifer Transmissivity (gpd/ft) = 130000.0  
Aquifer Storativity = .25E-03  
Average Water Table Elevation (feet) = 814.0  
Direction of Regional Gradient = 48.  
Hydraulic Gradient (ft/ft) = -.140E-02  
Number of Columns = 21  
Number of Rows = 25  
Grid Spacing (feet) = 250.  
Upper left-hand corner of plot = ( 0., 0.)  
Number of Wells = 28

WELL #	X	Y	RADIUS (feet)	Q (gpm)	Time (days)	(hours)
1	240.0	4350.0	50.0	1500.00	.33	8.0
2	215.0	4100.0	100.0	-50.00	.33	8.0
3	465.0	4115.0	100.0	-50.00	.33	8.0
4	715.0	4128.0	100.0	-50.00	.33	8.0
5	965.0	4143.0	100.0	-50.00	.33	8.0
6	1215.0	4158.0	100.0	-50.00	.33	8.0
7	1465.0	4173.0	100.0	-50.00	.33	8.0
8	1715.0	4185.0	100.0	-50.00	.33	8.0
9	1965.0	4200.0	100.0	-50.00	.33	8.0
10	2150.0	4550.0	100.0	-50.00	.33	8.0
11	1965.0	4800.0	100.0	-50.00	.33	8.0
12	1965.0	5050.0	100.0	-50.00	.33	8.0
13	1965.0	5300.0	100.0	-50.00	.33	8.0
14	1965.0	5550.0	100.0	-50.00	.33	8.0
15	1965.0	5800.0	100.0	-50.00	.33	8.0
16	1965.0	6050.0	100.0	-50.00	.33	8.0
17	1965.0	6300.0	100.0	-50.00	.33	8.0
18	1700.0	4800.0	100.0	-50.00	.33	8.0
19	1600.0	5050.0	100.0	25.00	.33	8.0
20	1465.0	5300.0	100.0	30.00	.33	8.0
21	1340.0	5550.0	100.0	35.00	.33	8.0
22	1215.0	5800.0	100.0	40.00	.33	8.0
23	1090.0	6050.0	100.0	45.00	.33	8.0
24	965.0	6300.0	200.0	50.00	.33	8.0
25	700.0	6300.0	200.0	50.00	.33	8.0
26	500.0	6300.0	200.0	50.00	.33	8.0
27	300.0	6300.0	200.0	50.00	.33	8.0
28	100.0	6300.0	200.0	50.00	.33	8.0

APPENDIX I-2  
THEIS ANALYTICAL MODEL OUTPUT

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HEAD DISTRIBUTION

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	250.	500.	750.	1000.	1250.	1500.	1750.	2000.	2250.	2500.	2750.	3000.	3250.	3500.	3750.
250.	812.79	812.54	812.30	812.07	811.85	811.62	811.40	811.18	810.97	810.75	810.54	810.32	810.10	809.89	809.6
500.	812.92	812.68	812.45	812.22	811.99	811.78	811.56	811.35	811.14	810.93	810.72	810.51	810.30	810.08	809.8
750.	813.05	812.81	812.58	812.35	812.14	811.93	811.72	811.51	811.31	811.10	810.90	810.69	810.49	810.28	810.0
1000.	813.16	812.93	812.70	812.48	812.27	812.07	811.87	811.67	811.47	811.28	811.08	810.88	810.68	810.47	810.2
1250.	813.26	813.03	812.81	812.60	812.40	812.21	812.02	811.83	811.64	811.45	811.26	811.07	810.87	810.67	810.4
1500.	813.35	813.12	812.91	812.71	812.52	812.34	812.16	811.98	811.80	811.62	811.44	811.25	811.06	810.87	810.6
1750.	813.42	813.20	813.00	812.81	812.63	812.46	812.30	812.13	811.96	811.79	811.62	811.44	811.26	811.07	810.8
2000.	813.47	813.26	813.07	812.90	812.74	812.58	812.43	812.28	812.13	811.97	811.80	811.63	811.45	811.27	811.0
2250.	813.49	813.29	813.12	812.97	812.83	812.70	812.57	812.43	812.29	812.15	811.99	811.83	811.65	811.47	811.2
2500.	813.48	813.30	813.15	813.02	812.91	812.81	812.70	812.59	812.47	812.33	812.19	812.03	811.86	811.68	811.5
2750.	813.43	813.27	813.15	813.06	812.99	812.92	812.85	812.76	812.65	812.53	812.39	812.24	812.07	811.90	811.7
3000.	813.32	813.18	813.11	813.08	813.06	813.04	813.00	812.94	812.85	812.73	812.60	812.45	812.29	812.12	811.9
3250.	813.13	813.03	813.03	813.08	813.14	813.17	813.18	813.14	813.07	812.96	812.83	812.68	812.52	812.35	812.1
3500.	812.80	812.78	812.90	813.07	813.23	813.34	813.39	813.38	813.31	813.21	813.07	812.92	812.76	812.58	812.4
3750.	812.25	812.37	812.72	813.08	813.27	813.57	813.67	813.67	813.60	813.48	813.33	813.17	813.00	812.82	812.6
4000.	811.24	811.75	812.54	813.17	813.61	813.90	814.04	814.04	813.92	813.77	813.60	813.43	813.25	813.07	812.8
4250.	808.11	810.76	812.32	813.22	813.81	814.20	814.43	814.48	814.26	814.07	813.88	813.69	813.50	813.31	813.1
4500.	809.20	810.94	812.35	813.22	813.82	814.26	814.55	814.69	814.62	814.36	814.15	813.95	813.75	813.56	813.3
4750.	811.82	812.17	812.86	813.48	813.99	814.43	814.87	815.04	814.84	814.62	814.40	814.20	814.00	813.80	813.6
5000.	813.14	813.19	813.48	813.85	814.22	814.57	814.98	815.27	815.06	814.85	814.65	814.45	814.25	814.05	813.8
5250.	814.02	813.95	814.05	814.24	814.47	814.72	815.16	815.48	815.29	815.09	814.89	814.69	814.49	814.29	814.0
5500.	814.68	814.54	814.53	814.60	814.71	815.01	815.41	815.71	815.52	815.32	815.12	814.92	814.73	814.53	814.3
5750.	815.19	815.01	814.93	814.92	814.96	815.32	815.68	815.96	815.75	815.55	815.36	815.16	814.97	814.77	814.5
6000.	815.58	815.36	815.25	815.19	815.36	815.66	815.96	816.19	815.97	815.78	815.59	815.39	815.20	815.01	814.8
6250.	815.84	815.57	815.51	815.52	815.78	816.00	816.22	816.40	816.18	815.99	815.81	815.63	815.44	815.25	815.0

	4000.	4250.	4500.	4750.	5000.	5250.
250.	809.45	809.23	809.01	808.78	808.56	808.33
500.	809.65	809.43	809.21	808.99	808.77	808.54
750.	809.86	809.64	809.42	809.20	808.98	808.76
1000.	810.06	809.85	809.63	809.41	809.20	808.97
1250.	810.26	810.05	809.84	809.63	809.41	809.19
1500.	810.47	810.26	810.05	809.84	809.63	809.41
1750.	810.67	810.47	810.27	810.06	809.84	809.63
2000.	810.88	810.68	810.48	810.27	810.06	809.85
2250.	811.10	810.90	810.70	810.49	810.28	810.07
2500.	811.31	811.12	810.92	810.71	810.50	810.29
2750.	811.53	811.34	811.14	810.93	810.73	810.52
3000.	811.75	811.56	811.36	811.16	810.95	810.74
3250.	811.98	811.79	811.59	811.39	811.18	810.97
3500.	812.21	812.02	811.82	811.62	811.41	811.20
3750.	812.45	812.25	812.05	811.85	811.64	811.43
4000.	812.68	812.49	812.29	812.08	811.87	811.66
4250.	812.92	812.72	812.52	812.32	812.11	811.90
4500.	813.16	812.96	812.76	812.55	812.35	812.13
4750.	813.40	813.20	813.00	812.79	812.58	812.37
5000.	813.65	813.44	813.24	813.03	812.82	812.61
5250.	813.89	813.68	813.48	813.27	813.06	812.85
5500.	814.13	813.92	813.72	813.51	813.30	813.08
5750.	814.37	814.17	813.96	813.75	813.54	813.32
6000.	814.61	814.41	814.20	813.99	813.78	813.57
6250.	814.85	814.65	814.44	814.23	814.02	813.81

I-4

HANTUSH-JACOB ANALYTICAL MODEL (WALTON B-10) OUTPUT

WALTON - B10

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OBSERVATION WELL: MW-1D  
RADIAL DISTANCE TO WELL (FT) = 6.9000E+02  
AQUIFER TRANSMISSIVITY (GPD/FT) = 9.0000E+04  
AQUIFER STORATIVITY (DIM) = 4.6000E-04  
AQUITARD VERTICAL PERMEABILITY (GPD/SQ FT) = 5.1000E-01  
AQUITARD THICKNESS (FT) = 2.0000E+01  
TIME (DAY) = 3.3333E-01  
DISCHARGE RATE OF WELL (GPM) = 1.5540E+03  
DRAWDOWN (FT) = 4.6553E+00

WALTON - B10

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OBSERVATION WELL: MW-8D  
RADIAL DISTANCE TO WELL (FT) = 1.1700E+03  
AQUIFER TRANSMISSIVITY (GPD/FT) = 9.0000E+04  
AQUIFER STORATIVITY (DIM) = 5.1000E-04  
AQUITARD VERTICAL PERMEABILITY (GPD/SQ FT) = 8.0000E-02  
AQUITARD THICKNESS (FT) = 2.0000E+01  
TIME (DAY) = 3.3333E-01  
DISCHARGE RATE OF WELL (GPM) = 1.5540E+03  
DRAWDOWN (FT) = 4.5529E+00

WALTON - B10

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OBSERVATION WELL: MW-13D  
RADIAL DISTANCE TO WELL (FT) = 1.2750E+03  
AQUIFER TRANSMISSIVITY (GPD/FT) = 1.3500E+05  
AQUIFER STORATIVITY (DIM) = 3.7000E-04  
AQUITARD VERTICAL PERMEABILITY (GPD/SQ FT) = 3.1000E-01  
AQUITARD THICKNESS (FT) = 3.5000E+01  
TIME (DAY) = 3.3333E-01  
DISCHARGE RATE OF WELL (GPM) = 1.5540E+03  
DRAWDOWN (FT) = 3.1509E+00

WALTON - B10

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OBSERVATION WELL: PH WELL  
RADIAL DISTANCE TO WELL (FT) = 1.4200E+03  
AQUIFER TRANSMISSIVITY (GPD/FT) = 1.0500E+05  
AQUIFER STORATIVITY (DIM) = 1.9000E-04  
AQUITARD VERTICAL PERMEABILITY (GPD/SQ FT) = 1.5100E-01  
AQUITARD THICKNESS (FT) = 4.0000E+01  
TIME (DAY) = 3.3333E-01  
DISCHARGE RATE OF WELL (GPM) = 1.5540E+03  
DRAWDOWN (FT) = 4.5334E+00